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SECOND FIVE-YEAR REVIEW REPORT FOR NEW HAMPSHIRE PLATING COMPANY SUPERFUND SITE

Merrimack, Hillsborough County, New Hampshire
NHDES Site #: 198406030
Project Type: Superfund
Project Number: 0001951

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Date of Report: January 6, 2014

SDMS Doc ID 568962

SECOND
FIVE-YEAR REVIEW REPORT FOR
NEW HAMPSHIRE PLATING COMPANY SUPERFUND SITE
MERRIMACK, HILLSBOROUGH COUNTY, NEW HAMPSHIRE

Prepared by

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Region 1
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12/30/14

Date

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AGQS	Ambient Groundwater Quality Standards
AOC	Areas Of Concern
AURs	Activity And Use Restrictions
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code Of Federal Regulations
CIC	Community Involvement Coordinator
cis-DCE	Cis-1,2-Dicholoroethene
COC	Contaminant Of Concern
CSF	Cancer Slope Factor
cVOC	Chlorinated VOC
DO	Dissolved Oxygen
DOC	Dissolved Organic Carbon
EAs	Electron Acceptors
ED	Electron Donor
EPA	U.S. Environmental Protection Agency
EPCs	Exposure Point Concentrations
ESD	Explanation of Significant Differences
FYR	Five-Year Review
GMZ	Groundwater Management Zone
GZA	GZA GeoEnvironmental, Inc.
HDPE	High-Density Polyethylene
ICLs	Interim Cleanup Levels
ICs	Institutional Controls
JCI	Jones Chemical, Inc.
MCLGs	Maximum Contaminant Level Goals
MCLs	Maximum Contaminant Levels
mg/kg	Milligrams Per Kilogram
mg/L	Milligrams Per Liter
NA	Natural Attenuation
NCP	National Contingency Plan
NHAG	New Hampshire Office Of The Attorney General
NHDES	New Hampshire Department Of Environmental Services
NHPC	New Hampshire Plating Company
NOAA	National Oceanic And Atmospheric Administration
O&M	Operation And Maintenance
ORP	Oxidation-Reduction Potential
OU	Operable Unit
PCE	Tetrachloroethylene
RAOs	Remedial Action Objectives
RI	Remedial Investigation
RLs	Reporting Limits
ROD	Record Of Decision
RPM	Remedial Project Manager
RSLs	Regional Screening Levels

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LIST OF ACRONYMS

Site	Entire NHPC Property
TCE	Trichloroethene
TEC	Threshold Effect Concentration
TELs	Threshold Effects Levels
the Town	Town of Merrimack, New Hampshire
VC	Vinyl Chloride
VISL	Vapor Intrusion Screening Level
VOCs	Volatile Organic Compounds
$\mu g/m^3$	Micrograms Per Cubic Meter
µg/L	Micrograms Per Liter

EXECUTIVE SUMMARY

This is the second Five-Year Review (FYR) for the New Hampshire Plating Company (NHPC) Superfund Site (Site) located in Merrimack, Hillsborough County, New Hampshire. The purpose of this FYR is to review information to determine if the remedy is and will continue to be protective of human health and the environment. The triggering action for this statutory FYR was the signing of the previous FYR on 12/29/2009.

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

- To the south by Wright Avenue and beyond by a property owned by the Young Men's Christian Association;
- To the southwest by ACME Pressure Washing (formerly Aggregate Industries);
- To the east by Jones Chemical, Inc. (JCI) property and a rail road right-of-way; and beyond by Transupport, Inc. and Windsor Industries (Lot 22 owned by Combat Corp and Lot 22-1 owned by Equivise Ltd.); and
- To the southeast by the New England Pole and Wood Treating Company property.

The NHPC property 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 Site study area, approximately 600 feet south of the NHPC property. A majority of the NHPC Site is located within the 100-year floodplain, which considers a base flood elevation of 119 feet[1] (U.S. Department of Housing and Urban Development, 1979).

The NHPC property was the location of an electroplating facility that operated from 1962 to 1985. Wastes from NHPC's operations were discharged to several lagoons constructed in an area of wetlands on the Site. Since 1987, the U.S. Environmental Protection Agency (EPA) and the New Hampshire Department of Environmental Services have conducted several cleanup actions at the Site. The Site was placed on the National Priorities List in 1992. In September 1998, EPA selected a long-term remedy in its Record of Decision that included removal and treatment of contaminated soils, on-site backfilling of treated soils, re-grading of much of the Site, restrictions on subsurface excavation and groundwater use, and monitored natural attenuation of contaminants in groundwater. EPA began remedial action at the Site in 2004 and completed construction in September 2006. Long-term groundwater monitoring began in May 2007. This second statutory FYR was performed to assure that the selected remedy continues to be protective of human health and the environment. Based on this second FYR, the selected remedy has been determined to be protective in the short-term, but institutional controls are still needed for long-term protectiveness at this Site.

[1] National Geodetic Vertical Datum

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: New Hampshire Plating Company Superfund Site		
EPA ID: NHD001091453		
Region: 1	**State:** NH	**City/County:** Merrimack, Hillsborough County

SITE STATUS	
NPL Status: Final	
Multiple OUs? No	**Has the site achieved construction completion?** Yes

REVIEW STATUS
Lead agency: EPA
Author name (Federal or State Project Manager): Ronald Jennings
Author affiliation: EPA, Region 1
Review period: 5/22/2014 - 12/29/2014
Date of site inspection: 10/23/2014
Type of review: Statutory
Review number: 2
Triggering action date: 12/29/2009
Due date *(five years after triggering action date)*: 12/29/2014

Issues/Recommendations

Issues and Recommendations Identified in the Five-Year Review:

OU(s): *Entire Site*	**Issue Category: Institutional Controls**			
	Issue: Institutional controls, including the establishment of a groundwater management zone, have not been implemented.			
	Recommendation: EPA to consider available options for engaging with officials from the State of New Hampshire and/or the Town on an effective process for selecting and then implementing adequate ICs for both soil and groundwater at the NHPC Site			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	EPA/State	EPA/State	6/30/2016

OU(s): *Entire Site*	**Issue Category: Monitoring**			
	Issue: Regulatory updates have been made for manganese, chloroform, and arsenic standards and additional groundwater COCs have been identified.			
	Recommendation: Completion of a Decision Document updating Site COCs and ICLs.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	EPA/State	EPA/State	3/31/2016

Protectiveness Statement(s)

Site-wide Protectiveness Statement

Protectiveness Determination:	*Addendum Due Date (if applicable):*
Short-term Protective	

Protectiveness Statement:
The remedy implemented at the NHPC Superfund Site is currently protective of human health and the environment, because the source control portion of the remedy included excavation, chemical fixation, and on-site backfilling of treated soils. In addition, treated materials were covered with a 2-foot permeable soil cover and re-vegetated to address potential human health and ecological exposures. With the source controls completed, groundwater quality is anticipated to be restored to acceptable levels through dilution and natural attenuation.

In order for the remedy to be protective in the long-term, however, the following ICs should be considered:

<u>To prevent exposures to contaminated groundwater</u>:

- Establish a GMZ (which will include the NHPC property and all surrounding properties with groundwater impacts from contamination originating from the NHPC site).
- Attach restrictions, or notices as appropriate, to deeds of the NHPC property and the properties within the designated GMZ or enact local ordinances to prohibit the potable use of untreated contaminated groundwater underlying the Site and within the GMZ.

<u>To prevent exposes to treated soils</u>:

- Attach restrictions to the deed of parcel 1 (the former NHPC building area) to ensure the future property use remains industrial/commercial.
- Attach restrictions to the deed of parcel 2 (the former lagoon area) to ensure the remaining wetlands are undisturbed and to limit any future use of the treated-backfilled portion of parcel 2 to activities which do not result in excavation below the 2-foot clean-fill layer.

I. INTRODUCTION

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) prepares FYRs pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121 and the National Contingency Plan (NCP). CERCLA 121 states:

> "*If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.*"

EPA interpreted this requirement further in the NCP; 40 Code of Federal Regulations (CFR) Section 300.430(f)(4)(ii), which states:

> "*If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such actions no less often than every five years after the initiation of the selected remedial action*."

EPA Region 1 conducted this FYR on the remedy implemented at the New Hampshire Plating Company (NHPC) Superfund Site (Site) in Merrimack, Hillsborough County, New Hampshire. EPA is the lead agency for developing and implementing the remedy for the Site. The New Hampshire Department of Environmental Services (NHDES), as the support agency representing the State of New Hampshire, has reviewed all supporting documentation and provided input to EPA during this FYR process.

This is the second FYR for the NHPC Superfund Site. The triggering action for this statutory review is the completion date of the previous FYR on December 29, 2009. This FYR is required due to the fact that hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure. The Site consists of one Operable Unit (OU), which is addressed in this FYR.

II. PROGRESS SINCE THE LAST REVIEW

Table 1: Protectiveness Determinations/Statements from the 2009 FYR

OU #	Protectiveness Determination	Protectiveness Statement
Site-wide	Short-term Protective	The remedy implemented at the NHPC Superfund Site is currently protective of human health and the environment as envisioned by the ROD. In order for the remedy to be protective in the long term, however, the following actions need to be taken: (1) implement institutional controls, including the establishment of an approved groundwater management zone; (2) evaluate groundwater monitoring data at the Site as it relates to abutting property uses and the potential for vapor intrusion into indoor air; and (3) monitor metals in the pore water and sediment in the transition zone between groundwater and surface water in the Merrimack River and Horseshoe Pond.

Table 2: Status of Recommendations from the 2009 FYR

OU #	Issue	Recommendations/ Follow-up Actions	Party Responsible	Oversight Party	Original Milestone Date	Current Status	Completion Date (if applicable)
Site-wide	Institutional controls, including the establishment of a groundwater management zone, have not been implemented.	Implement institutional controls for both the NHPC property and groundwater.	State	EPA	3/31/2011	Ongoing	N/A
Site-wide	Potential vapor intrusion exposures should be further evaluated.	Evaluate groundwater monitoring data at the Site as it relates to abutting property uses and the potential for vapor intrusion into indoor air.	State	EPA	3/31/2011	Completed	11/1/2013

OU #	Issue	Recommendations/ Follow-up Actions	Party Responsible	Oversight Party	Original Milestone Date	Current Status	Completion Date (if applicable)
Site-wide	Ecological effects for benthic invertebrates should be further evaluated for metals at the transition zone between groundwater and surface water in the Merrimack River and Horseshoe Pond.	Monitor metals in the pore water and sediments in the transition zones between groundwater and surface water in the Merrimack River and Horseshoe Pond.	State	EPA	3/31/2011	Completed	4/25/2014

Recommendation 1

Required ICs have not been implemented. The remedy calls for the establishment and implementation of institutional controls (ICs) affecting land use and groundwater use at the abandoned NHPC Superfund Site in Merrimack, New Hampshire. However, Site ICs have not yet been put in place as all former owners or operators appear to be defunct/deceased and the Town of Merrimack, New Hampshire (the Town) has not expressed a willingness to move on tax foreclosure. Despite this, Region 1 made significant efforts since the last FYR in December 2009 in attempting to implement ICs at the Site. In 2010 and 2011, representatives from EPA, the NHDES, and the New Hampshire Office of the Attorney General (NHAG) attempted to secure formal Activity and Use Restrictions (AURs) by the Town which holds a tax lien on the Site property. However, those efforts to finalize AURs were not ultimately successful. Also, in 2013 and 2014, EPA communicated with representatives of the Town regarding the development and approval of a Site-specific ordinance to restrict the use of soil and groundwater at and around the Site. Those efforts, too, failed to produce tangible results. At this time EPA is considering available options for engaging with officials from the State of New Hampshire and/or the Town on an effective process for selecting and then implementing adequate ICs for both soil and groundwater at the NHPC Site.

Recommendation 2

Refer to Question B in **Section IV. Technical Assessment** for a description of the activities involved in the completion of the recommendation involving potential vapor intrusion exposures.

Recommendation 3

Refer to Question B in **Section IV. Technical Assessment** for a description of the activities involved in the completion of the recommendation involving ecological effects for benthic invertebrates.

Remedy Implementation Activities

Since the last FYR, remedy implementation activities that have occurred at the NHPC Site have included routine monitoring associated with the management of migration remedy (evaluation of natural attenuation [NA]). Refer to **Section III. Data Review** below for further discussion regarding groundwater quality. Refer to **Appendix A** for a historical summary of remedial implementation activities that have occurred at the Site.

System Operation/Operation and Maintenance (O&M) Activities

O&M and monitoring activities that have occurred since the previous FYR include:

- Annual groundwater monitoring;
- Installation of additional monitoring wells NHP_MW-400R, NHP_MW-401S, NHP_MW-401D, and NHP_MW-402D during fall 2012 to further evaluate groundwater quality;
- Decommissioning of obsolete monitoring wells referred to as the "Island Drive" monitoring wells (NHP_MW-208 series) and the "Litchfield Wells" (NHP_LW series) during October 2014;
- Protective cover maintenance including landscape and open space management; and
- Monitoring well maintenance including replacement of concrete surface seals and/or locking caps as appropriate.

Refer to **Appendix A** for annual O&M costs at the NHPC Site since the last FYR.

III. FIVE-YEAR REVIEW PROCESS

Administrative Components

The NHPC Superfund Site FYR was led by Ronald Jennings and Cheryl Sprague of the U.S. EPA, Remedial Project Managers (RPM) for the Site, and Rodney Elliott, the Community Involvement Coordinator (CIC). Robin Mongeon, of the NHDES, assisted in the review as the representative for the support agency.

The review, which began on 5/22/2014, consisted of the following components:

- Community Notification and Involvement;
- Document Review;
- Data Review;
- Site Inspection; and
- FYR Report Development and Review.

Community Notification and Involvement

Activities to involve the community in the FYR process were initiated between the RPM and CIC for the Site. A notice was published on the EPA website, http://www.epa.gov/region1/newsevents/index.html, on 2/13/2014, stating that there was a FYR being performed for the Site and inviting the public to submit any comments to the EPA. Refer to **Appendix D** for a copy of the notice.

The results of the review and the report will be made available at the Site information repository located at Merrimack Public Library, 470 Daniel Webster Highway, Merrimack, New Hampshire, and the EPA Records Center at 5 Post Office Square in Boston, MA. A copy will be provided to the Town Manager, and an electronic copy will be posted on the following:

EPA's NHPC web site at:
http://yosemite.epa.gov/r1/npl_pad.nsf/8b160ae5c647980585256bba0066f907/53cb30feffc3d3478525691f0063f6de!OpenDocument

NHDES OneStop Environmental Site Information web site at:
http://www2.des.state.nh.us/DESOnestop/PRSDetail.aspx?ID=0001951&Type=PRS

Document Review

This FYR consisted of a review of relevant documents including O&M records and monitoring data. Applicable groundwater cleanup standards, as listed in the September 1998 ROD, were also reviewed.

Data Review

Refer to **Table 3** for a summary of the groundwater analytical results, which represents only those contaminants detected in groundwater and illustrates exceedances of applicable action limits. Refer to **Figure 1A** for a Site Locus and Site Plan, **Figure 1B** for an Historic NHPC Property Plan, and **Figure 2** through **Figure 4** for the distribution of volatile organic compounds (VOCs) and metals in Site groundwater from data collected during July 2014.

Interim cleanup levels (ICLs) for contaminants of concern (COCs) were established in the 1998 ROD issued by EPA Region 1 for groundwater at the Site. Groundwater data results were compared against New Hampshire Ambient Groundwater Quality Standards (AGQS) included in Env-Or 600 *Contaminated Site Management*. The following summarizes the most recent groundwater analytical results.

NH AGQS/ROD ICL Exceedances

VOCs, metals and cyanide were detected in groundwater quality samples collected from one or more wells during the July 2014 sampling round at concentrations exceeding AGQS and/or ROD ICLs. VOCs detected in groundwater quality samples at concentrations exceeding AGQS/ROD ICLs include trichloroethene (TCE), vinyl chloride (VC), and chloroform. Metals detected at concentrations exceeding AGQS/ROD ICLs include cadmium, nickel, arsenic, and

manganese. Cyanide was detected at a concentration exceeding AGQS at well NHP_MW-308S. Additionally, the detected concentration of 1,4-dioxane exceeded the current AGQS of 3 micrograms per liter (µg/L) in the groundwater samples collected from wells NHP_JCMW-2D and NHP_JCMW-4D. 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-trichloroethane, which is a COC included in the ROD. Refer to **Figures 2A** and **2B** for an illustration of the lateral distribution of concentrations exceeding regulatory groundwater quality standards in shallow overburden and deep overburden/bedrock groundwater, respectively.

GW-2 Exceedances

Category GW-2 groundwater included in NHDES' Risk Characterization and Management Policy is considered to be a potential source of vapors of contaminants to indoor air. The New Hampshire GW-2 groundwater screening values are intended to provide guidelines on when it may be appropriate to examine the indoor air exposure pathway. Based on this evaluation, Site VOCs were not compared to EPA Vapor Intrusion Screening Levels (VISL) or the EPA Vapor Intrusion Calculator for this analysis.

Based on comparison of the Site VOCs detected to GW-2 groundwater screening levels, detected concentrations of VOCs in groundwater samples collected from certain wells exceed the GW-2 screening levels including:

- TCE (20 µg/L) – wells MW-301, MW-302, NHP_JCMW-2D, NHP_MW-302S, NHP_MW-303D, and NHP_MW-304D;
- VC (4 µg/L) – well NHP_MW-309S; and
- Chloroform (70 µg/L) – well NHP_JCMW-6.

An evaluation of the vapor intrusion pathway using EPA VISLs was conducted by EPA during 2012. Based on their study, EPA concluded that vapor intrusion was not a current pathway of concern for the NHPC site. See further discussion in **Section IV. Question B**. VOC concentrations in groundwater since 2012 have been consistent and therefore EPA's prior conclusion remains valid.

Distribution of VOCs in Groundwater

Refer to **Figure 1A** for the location of the NHPC property and adjoining referenced properties. Refer to **Figures 3A** and **3B** for an illustration of the distribution of VOCs detected in shallow overburden and deep overburden/bedrock groundwater quality samples collected during the July 2014 sampling round, respectively. At the NHPC Site, dissolved phase contaminants have migrated in groundwater from the former on-site lagoons and building source areas, under adjacent properties and to the Merrimack River east of the Site. The dissolved phase contaminants in groundwater have also migrated south toward Horseshoe Pond. The following summarizes the groundwater analytical results for VOCs:

Shallow Overburden Hydrogeologic Unit

- TCE is the most commonly detected VOC in Site groundwater. Within the shallow overburden, the area of the highest TCE concentrations detected in groundwater samples is located within the southernmost portion of the NHPC Site, and is associated with well NHP_MW-302S (119 µg/L) and extends to the southeast to the New England Pole wells MW-301 and MW-302[2] (32 µg/L and 21 µg/L, respectively);
- With the exception of chloroform, VOCs were not detected above the laboratory reporting limit in the shallow overburden wells located on the JCI property (NHP_JCMW-2S, NHP_JCMW-4S, and NHP_JCMW-6); and
- The current spatial distribution of TCE related breakdown products and other VOCs in the shallow overburden hydrogeologic unit are consistent with our historical understanding of Site conditions. Specifically, the primary source area of TCE is understood to have been located within former Lagoon 1 area (refer to **Figure 1B**), with contaminants transported laterally to the southeast, south, and southwest, and vertically downward through fine-grained lacustrine deposits into the deep overburden.

Deep Overburden Hydrogeologic Unit

- Consistent with previous findings, the distribution of dissolved-phase TCE and direction of groundwater flow suggest two potentially distinct areas of dissolved-phase VOCs within the deep overburden hydrogeologic unit (glacial till and outwash/deltaic deposits). The following subsections describe the identified areas of dissolved-phase VOCs (principally TCE):

  Southern Area of Dissolved-Phase VOCs

  - The distribution of dissolved-phase TCE suggested by the concentrations of TCE detected in wells NHP_MW-303D and NHP_MW-304D (63 µg/L and 37 µg/L, respectively) is roughly consistent with the distribution of VOCs within shallow overburden groundwater where VOC contaminants have historically been transported laterally to the southeast, south, and southwest. The July 2014 TCE concentration detected in the groundwater sample collected from downgradient deep overburden well NHP_MW-301D located within the southwest portion of the Site is below the AGQS/ROD ICL for TCE; however, the TCE concentration detected in downgradient well NHP_MW-203D located within the eastern portion of the Site in the deep overburden hydrogeologic unit exceeds the AGQS/ROD ICL at 5.5 µg/L. The understanding of Site conditions assumes residual VOC contaminated soil present within fine-grained lacustrine deposits are a continuing source of contamination to deep overburden groundwater.

[2] Wells MW-301 and MW-302 are not sampled by NHDES for the NHPC annual monitoring. These wells are sampled during November of each year 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 GeoEnvironmental, Inc. (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.

No VOCs were detected above laboratory reporting limits in other deep overburden groundwater wells downgradient from this source area (NHP-MW-108D, NHP-MW-109D, NHP-MW-202D, NHP-MW-306D, NHP_MW-307D, and NHP-MW-308D) with the exception of tetrachloroethylene (PCE) and 1,4-dioxane detected below the AGQS at NHP_MW-106; TCE and 1,4-dioxane detected below the AGQS at NHP_MW-309D; and methyl tert-butyl ether (MtBE) detected below the AGQS at NHP_MW-302D..

Northern Area of Dissolved-Phase VOCs

- An area of dissolved-phase TCE is located along the eastern NHPC property boundary encompassing wells NHP_JCMW-2D with a TCE concentration of 102 µg/L, and NHP_JCMW-4D with a TCE concentration of 14 µg/L. TCE concentrations detected in samples collected from well NHP_JCMW-2D have been relatively stable since 2007 (refer to **Table 3** and **Graph 1A)**. With the exception of 14 µg/L of TCE detected in the sample collected from well NHP_JCMW-4D, TCE was not detected in the wells in the immediate area. Potential upgradient wells include NHP_MW-311D, NHP_MW-312D and NHP_MW-402D. Based on the available hydraulic head and dissolved-phase TCE data, as well as our understanding of Site hydrostratigraphy, the likely source of the TCE in the northern dissolved-phase plume may be the result of residual separate phase TCE present within the glaciolacustrine unit either on the eastern edge of the NHPC property or just to the east of the property boundary. The observed presence of TCE and its breakdown products in deep overburden groundwater at NHP_JCMW-2D and the downgradient well NHP_MW-204D located near the Merrimack River is also consistent with a residual source within the glaciolacustrine deposit.

Bedrock Hydrogeologic Unit

- TCE was detected in bedrock groundwater collected from downgradient well locations NHP_MW-106R (2.2 µg/L) and NHP_MW-400R (5.0 µg/L). The TCE detection at NHP_MW-106R is consistent with historical concentrations. Based on our understanding, groundwater quality at these locations may be controlled by fractures trending consistent with south-southwest linear (trough-like) depression in the bedrock surface.

<u>Distribution of Metals and Other Inorganics in Groundwater</u>

Refer to **Figures 4A** and **4B** for an illustration of the distribution of COC metals and cyanide in shallow overburden and deep overburden/bedrock groundwater, respectively. 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 and July 2014 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 Lagoon 2 (**Figure 1B**) and plumes extending downgradient to the south and east and, to a lesser

extent, to the west. Cadmium was observed primarily in the shallow overburden while nickel was observed in groundwater in both the shallow and deep overburden hydrogeologic units. Nickel was detected in bedrock groundwater collected from background well NHP_MW-102R, while cadmium was not detected in bedrock groundwater during 2014.

- Cadmium was detected at concentrations above the AGQS/ROD ICL of 0.005 milligrams per liter (mg/L) in on-Site shallow overburden well NHP_MW-303S (1.05 mg/L); off-Site shallow overburden wells NHP_MW-108S (0.1395 mg/L) and NHP_MW-301S (0.0206 mg/L); and on-Site deep overburden well NHP_MW-304D (0.0124 mg/L). With the exception of increasing concentrations detected at downgradient well NHP_MW-108S, the cadmium concentrations within the plume appear generally stable to decreasing between 2007 and 2014.
- Nickel was detected above the AGQS/ROD ICL of 0.1 mg/L in on-Site shallow overburden well NHP_MW-303S (0.3383 mg/L) and on-Site deep overburden well NHP_MW-304D (0.1087 mg/L).
- Other parameters detected include cyanide, chromium, and lead and are summarized as follows:
  - Cyanide was detected at concentrations exceeding the AGQS/ROD ICL (0.2 mg/L) in shallow overburden groundwater samples collected from NHPC property well NHP_MW-308S (0.29 mg/L), and below the AGQS/ROD ICL at NHPC well NHP_MW-304S and upgradient well NHP_MW-102D;
  - Total chromium was detected at concentrations below the AGQS/ROD ICL (0.1 mg/L) in six shallow overburden wells (NHP_JCMW-6, NHP_MW-108S, NHP_MW-109S, NHP_MW-202S, NHP_MW-304S, and NHP_MW-305S), eight deep overburden groundwater wells (NHP_MW-106, NHP_MW-108D, NHP_MW-109D, NHP_MW-202D, NHP_MW-301D, NHP_MW-305D, NHP_MW-306D and NHP_MW-402D), and two bedrock wells (NHP_MW-102R and NHP_MW-309R); and
  - Lead was detected at concentrations below the AGQS/ROD ICL (0.02 mg/L) in deep overburden groundwater well NHP_MW-109D.
- Refer to **Figures 4C** and **4D** for illustrations of the distribution of arsenic and manganese in shallow overburden and deep overburden/bedrock groundwater, respectively. Consistent with historical data, manganese was detected in most shallow and deep overburden wells and bedrock wells at variable concentrations, although manganese was generally not detected in the shallow overburden in the northern and western portions of the study area. Manganese concentrations were generally less than the applicable AGQS/ROD ICL, with the exception of shallow overburden well NHP_MW-310S (1.64 mg/L), and deep overburden wells NHP_MW-308D (2.49 mg/L) and NHP_JCMW-2D (2.59 mg/L). It is possible that manganese detected in groundwater samples collected from the NHPC property 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.

- Arsenic was detected at various well locations in shallow and deep overburden groundwater and at bedrock well NHP_MW-308R. Arsenic concentrations were generally detected at concentrations less than the applicable AGQS/ROD ICL with the exception of shallow overburden wells NHP_MW-309S (0.0254 mg/L) and NHP_MW-310S (0.0211 mg/L), deep overburden wells NHP_JCMW-2D (0.0150 mg/L) and NHP_MW-109D (0.0254 mg/L), and bedrock well NHP_MW-308R (0.0167 mg/L). It is possible that arsenic detected in groundwater samples collected from the NHPC property 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. The Site lithology and published arsenic concentration data for bedrock groundwater in the vicinity of NHPC indicate the likely presence of a background contribution to arsenic in groundwater.

Site Inspection

The inspection of the Site was conducted on 10/23/2014. In attendance were Ronald Jennings and Cheryl Sprague of EPA Region 1; Robin Mongeon of NHDES; and Amy Doherty and Tanya Justham of GZA. The purpose of the inspection was to assess the protectiveness of the remedy.

The Site inspection included visual inspection of the Site access gate, perimeter fence, covered areas, and groundwater monitoring wells on the NHPC property. The NHPC property, access gate, and perimeter fence appeared to be in good condition. The following issues were identified during the Site inspection:

- A tree has fallen on and damaged the perimeter fence in the northeastern corner of the NHPC property and the root ball of a fallen tree in the southeastern corner of the property has uplifted and damaged the bottom of the fence; and
- Ponding of stormwater runoff and potential flooding impacts to a building associated with the Acme Power Washing property abutting the NHPC property to the southwest were observed. While unclear at this time, it appeared that the source of stormwater runoff was potentially the improper location and grading of a storm drain located along Wright Avenue and potentially the final grading along the NHPC property boundary following the construction phase of the remedy.

A suspected irrigation well (concrete structure) was observed on the Acme Power Washing property adjoining the NHPC property along the southwestern boundary during the Site inspection. After discussions with the property owner, it was concluded by EPA that the suspected well was not in fact a well. The concrete structure was associated with the domestic sewer system for that property and housed a sewage pump/lift system. Based on information provided by the property owner, it was further concluded that the property utilizes municipal water to satisfy both potable and non-potable needs.

A second inspection of the Site was conducted by EPA on 12/17/14 in response to another abutter of the property, Synergy Self Storage, with concerns of potential flooding impacts originating from the NHPC property. In attendance were Ronald Jennings and Cheryl Sprague of EPA Region 1. The following issues were identified during this second Site inspection:

- Ponding of stormwater runoff was evident on the western side of a partially constructed access road from the rear of the Synergy Self Storage building to Wright Avenue. Further investigation found that an area in the back of the Acme Power Washing property, an abutter to both the NHPC and Synergy Self Storage, appeared to have a significant amount of fill material. Historic topographic maps show that the filled area was once a depression and likely stored surface water runoff. In addition, a wetland once existed along the border of NHPC and Acme Power Washing properties that likely provided further surface water runoff storage. This wetland was eliminated as part of the remedial action at NHPC.
- The fence along the northern end of the NHPC property, specifically along the northern edge of the drainage basin (that runs to the access road to Jones Chemical), is no longer present (across the drainage basin from the electrical station). The abutting property is occupied by a landscaping company. Drainage pipes, that provide drainage from the landscaping parking area, were observed to have been placed above the rip rap that stabilizes the bank along the northern edge of the drainage basin.

Interviews

During the FYR process, interviews were conducted with parties impacted by the Site, including the current abutting property landowners and Town officials. The purpose of the interviews was to document any perceived problems or successes with the remedy that has been implemented to date. Interviews were conducted by EPA and additional information from the interviews is included in **Appendix E**.

Based on the results of the interviews conducted, the remedy is perceived as functioning as intended. Representatives of the Town stated that there have been no complaints regarding the Site. The owners of Acme Power Washing and Synergy Self Storage, which abut the NHPC property to the west, expressed concerns about flooding on their properties. Interviewees indicated that the stormwater-related impacts to their properties were coincidental with regrading of the NHPC Site during the construction phase of the remedy and that stormwater-related impacts were on-going.

IV. TECHNICAL ASSESSMENT

Question A: Is the remedy functioning as intended by the decision documents?

YES. The remedy selected for the Site included source control (treatment of contaminated soil), management of migration (natural attenuation (NA) of contaminated groundwater underlying the NHPC property and select adjacent properties), and ICs. A review of documents; applicable or relevant and appropriate requirements (ARARs); risk assumptions; and the results of the Site inspection indicate that the remedy is currently protective, for exposures envisioned by the ROD.

The interim cleanup goals (ICGs) for soil remain protective. The cleanup goals for cadmium, chromium, cyanide, lead, manganese, and nickel in soil are based on their potential for leaching to groundwater rather than direct contact with the soil. The cleanup goal for cadmium in the top

2 feet below the land surface is based on protection of ecological receptors, and this cleanup goal is consistent with the leaching values. No information has come to light to question the methods underlying those calculations.

The ICLs for groundwater remain reasonable, given that there are no known consumers of the groundwater as drinking water. However, as discussed below in sections **Temporal Concentration Trends in Groundwater** and **Natural Attenuation Conditions at the Site**, evaluation of concentration trends and the effectiveness of the NA remedy for contaminated groundwater at the Site indicate that clean-up levels may not be attained within the anticipated time frame established in the ROD (26 to 58 years after completion of the source control component).

For the management of migration remedy to be protective in the long term, ICs are required to be established in accordance with the ROD to achieve the remedial objectives for the Site. As discussed below, ICs have not been established for the Site to date. Actions will need to be taken to ensure the protectiveness of the management of migration remedy in the long term; however, municipal water is the water source for all users in the area of the Site.

Temporal Concentration Trends in Groundwater

Temporal plots for parameters and wells with long-term or recent exceedances of AGQS in groundwater samples collected from Site wells are included in **Appendix F**. Temporal concentration plots were reviewed for graphical evidence of temporal trends in concentration. A Mann-Kendall statistical analysis of concentration data at wells with AGQS exceedances was performed to further evaluate potential temporal trends. The analysis was performed using Microsoft® Office Excel® 2010 spreadsheets, and a 95% confidence level was used for the analysis. Copies of the Mann-Kendall analysis spread sheets are included in **Appendix G** and a summary of the results is included on **Table 4**. Wells with fewer than four data points, or, in the case of well NHP_MW-203S, no recent data, were excluded from the Mann-Kendall analysis.

With few exceptions, the concentrations of COCs in groundwater appear to be relatively stable. The following summarizes observations from the concentration trend graphs and Mann-Kendall analysis.

VOCs

Refer to **Graph 1A** and **Graph 1B** for temporal plots of TCE concentration data for wells with exceedances of NH AGQS. TCE concentrations detected at wells NHP_JCMW-2D and NHP_MW-304Dhave been relatively stable since 2007. Potential increasing concentration trends were observed at wells NHP_MW-302S and NHP_MW-204S. The increasing trend at well NHP_MW-302S was confirmed during the Mann-Kendall analysis. Potential decreasing concentration trends were observed at wells NHP_MW-108S, NHP_MW-308S, NHP_MW-303D. The decreasing trend at well NHP_MW-303D was confirmed during the Mann-Kendall analysis. Concentrations detected at well NHP_MW-303S have fluctuated over time with no distinct trend. Wells NHP_MW-400R, NHP_MW-401S, and NHP_JCMW-4D have a relatively short sampling history (two or three rounds of data); however, the initial data suggest that the

TCE concentrations detected within groundwater collected from the two 400-series wells is increasing in concentration, while the concentration of TCE detected at NHP_JCMW-4D decreased between 2013 and 2014.

Chloroform has been detected at concentrations exceeding NH AGQS/ROD ICL in groundwater samples collected from wells NHP_MW-204S and NHP-JCMW-6, with a potential decreasing trend observed at well NHP_MW-204S since the high concentration detected during 2008 (**Graph 2**). Detected concentrations of chloroform increased at well NHP_JCMW-6 between 2013 and 2014.

Concentrations of VC detected within groundwater collected from well NHP_MW-309S indicate an increasing concentration trend since 2010, with concentrations increasing from less than the laboratory reporting limit of 2 µg/L to 45 µg/L detected during 2014 (**Graph 3**). The Mann-Kendall analysis confirmed a 97% probability of an increasing trend of VC at well NHP_MW-309S, likely the result of historical reductive dechlorination within the shallow TCE plume.

Concentrations of 1,4-dioxane exceeding AGQS have been detected in groundwater collected from wells NHP_JCMW-2D, NHP_JCMW-4D, and NHP_MW-303D since post remedy construction was completed in 2007 (**Graph 4**). A potential decreasing trend to concentrations at or below the AGQS for the last three sampling rounds is observed at well NHP_MW-303D. Potential increasing trends are observed at JCI wells NHP_JCMW-2D and NHP_JCMW-4D.

Cyanide

Cyanide has been detected at concentrations exceeding AGQS at well NHP_MW-308S twice between 2007 and 2014 (**Graph 5**). A decreasing trend in cyanide concentrations was observed between 2007 and 2009, and a possible increasing trend was observed between 2009 and 2014.

Metals

A potential increasing temporal trend for cadmium concentrations (**Graph 6A** and **Graph 6B**) is observed at wells NHP_MW-108S and NHP_MW-304D. The increasing trend was confirmed at well NHP_MW-108S by the Mann-Kendall analysis. A potential decreasing temporal trend is observed at wells NHP_MW-303S and NHP_MW-309S. The decreasing trend was confirmed at well NHP_MW-309S by the Mann-Kendall analysis. Cadmium concentrations detected with groundwater collected from wells NHP_MW-308S and NHP_MW-310S are relatively stable. Cadmium concentrations detected at well NHP_MW-301S have fluctuated over time with no distinct trend.

Concentrations of nickel detected in the groundwater at wells NHP_MW-303S and NHP_MW-304D display a decreasing trend since 2007 (refer to **Graph 7**), which was confirmed with a 97% probability for each well during the Mann-Kendall analysis.

In general, arsenic concentrations detected at wells NHP_JCMW-2D, NHP_MW- 109D, NHP_MW-308R, and NHP_MW-310S are relatively stable with occasional concentration peaks (**Graph 8**). An increasing trend of arsenic concentrations is observed in well NHP_MW-309S and confirmed by the Mann-Kendall analysis.

Increasing concentration trends are observed in manganese concentration data for wells NHP_JCMW-2D and NHP_MW-308D (**Graph 9**), and confirmed by the Mann-Kendall analysis. Manganese concentrations detected at wells NHP_MW-308S and NHP_MW-310S have fluctuated over time with no distinct trend.

Natural Attenuation (NA) Conditions at the Site

The following sections summarize an assessment of NA conditions at the NHPC site. The assessment was based on available data considered to be reflective of current NA conditions. The assessed data include NA indicator parameters, such as typical electron acceptors (EAs) utilized during terminal electron acceptor processes, electron donor (ED) data and condition indicators including oxidation-reduction potential (ORP) and pH.

Chlorinated VOCs

Estimated distributions of TCE and cis-1,2-dicholoroethene (cis-DCE) in groundwater are shown in **Plate 1** (**Appendix H**). Redox conditions in the shallow and deep overburden (i.e., shallow and deep flow systems) can be generally described as oxic/oxidizing based on recently-collected dissolved oxygen (DO) (refer to **Plate 2** [**Appendix H**]) and ORP data (refer to **Plate 3** [**Appendix H**]). Concentrations of DO exceed 2 mg/L in most locations with local zones of very high DO (i.e., greater than 10 mg/L). At concentrations greater than 2 mg/L, DO is a competitive EA that likely inhibits reductive dechlorination rates[3]. The source of these high DO concentrations is not known at this time, and sampling error appears to be unlikely based on data history. ORP data support the high DO condition assessment, as measurements within the overburden flow systems are generally positive with only one slightly negative measurement in the vicinity of the northern TCE plume (near well NHP_JCMW-2D on the JCI property).

Other collected EA indicator data include nitrate, sulfate and methane. The distributions of these indicator data are shown in relation to TCE and cis-DCE in **Plate 4** (**Appendix H**). Nitrate and sulfate represent potentially competing EAs that may inhibit rates of reductive dechlorination to a lesser degree than DO (USEPA, 1998). Nitrate appears to be present only at low concentrations, suggesting a limited nitrate inhibition. Sulfate appears to be present at potentially inhibitive concentrations (greater than 20 mg/L [EPA, 1998]), particularly in the shallow flow system in the vicinity of the northern TCE plume (at well NHP_JCMW-2D on the JCI property). Methane, which is a product of low-energy utilization of CO_2 as an EA, can be indicative of favorable reductive dechlorination conditions (USEPA, 1998); however, methane can also be produced as a result of decaying organic matter in the absence of chlorinated VOC (cVOC) contamination, such as residual lagoon materials that may reside at relatively shallow depths.

[3] U.S. EPA, 1998, "Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water," EPA/600/R-98/128.

In addition to utilizing cVOCs as EAs, anaerobic reductive dechlorination reactions require an ED as a growth substrate for the active microbes. Native organic carbon, which is frequently measured as total organic carbon (TOC), is typically utilized as a growth substrate (USEPA, 1998). However, the bioavailability of TOC is highly variable and infrequently assessed. Site TOC concentrations, which are depicted in **Plate 5** (**Appendix H**), are generally low. Concentrations of bioavailable organic carbon are likely to be a potentially limiting factor in terms of microbial growth sustainability.

Though daughter products of reductive dechlorination have been observed during the 2013 and 2014 monitoring events (e.g., cis-DCE and VC), the factors discussed above suggest that natural attenuation rates at the former NHPC site are very slow. The primary limitations appear to be rate inhibition stemming from EA competition as a result of the relatively high DO concentration and ED availability (i.e., low TOC/bioavailable organic carbon concentrations).

In summary, the data discussed above suggest cVOC NA has occurred and may be ongoing; however, rates of dechlorination are likely to be low to very low as a result of several limiting factors. Although the low to very low interpreted rates of dechlorination are anticipated to extend the cleanup time for the Site beyond the 26 to 58 years predicted within the ROD, an estimate of the amount of time beyond the predicted range is not possible with the data currently available.

Metals

The distributions of cadmium and nickel in groundwater are shown in **Plate 6** (**Appendix H**). The mobility potentials of cadmium and nickel are uncertain based on the available data. The limited zones of elevated concentrations suggest complexation reactions may be partly responsible for propagation in groundwater due to the reduced ion activity allowing greater concentrations within solution. Background levels of potential complex-forming ligands (i.e., chloride, sulfate, bicarbonate/carbonate, cyanide, dissolved organic carbon [DOC], etc.) are not well defined at this time and are considered to be low-quality indicators (i.e., in terms of complexation behavior and NA as a byproduct of cVOC dechlorination). As previously noted, DO and ORP data suggest generally oxidizing conditions in the shallow and deep flow systems. Under such conditions, cadmium and, to a lesser extent, nickel mobility may be promoted via oxidative dissolution of metal sulfides and/or decomposition of potentially-binding organic matter[4].

Groundwater pH, which is shown in **Plate 7** (**Appendix H**) in relation to the distributions of cadmium and nickel, is generally neutral in the shallow and deep flow systems, although local zones of more basic conditions (i.e., in the vicinity of the northern TCE plume at well NHP_JCMW-2D) and more acidic conditions (i.e., in the vicinity of NHP_MW-204R, which is screened within the bedrock) have been measured. These zones are not collocated with the primary zone of metals-contaminated groundwater which generally overlaps the portion of the

[4] U.S. EPA, 2007. "Monitored Natural Attenuation of Inorganic Contaminants in Ground Water – Volume 2 – Assessment of Non-Radionuclides Including Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Nitrate, Perchlorate, and Selenium."

southern TCE plume present in the shallow overburden and extends to the east. The uncomplexed Cd^{2+} (cadmium) ion is relatively stable and dominant at pH levels below 8.5 (USEPA, 2007). Given these conditions, adsorption likely represents a significant limiting factor in terms of mobility of metals-of-concern, as cadmium and nickel are recognized as being precipitated or absorbed by soil at pH levels of 6 or greater[5].

Institutional Controls

The selected remedy for the Site provides protection of human health by preventing or controlling potential exposures to contaminated groundwater through the use of ICs, stabilization/fixation of soils, and physical barriers (e.g., capping). NA in combination with source control was identified in the ROD as the remedy to address the remedial objectives. The ICs proposed, included:

- Establishing a groundwater management zone (GMZ);
- Attaching restrictions, or notices as appropriate, to deeds of the NHPC property and the properties within the designated GMZ or enacting local ordinances to prohibit the potable use of untreated contaminated groundwater underlying the Site and within the GMZ;
- Attaching restrictions to the deed of parcel 1 (the former NHPC building area) to assure the future property use remains industrial/commercial; and
- Attaching restrictions to the deed of parcel 2 (the former lagoon area) to assure the remaining wetlands are undisturbed and to limit any future use of the treated-backfilled portion of parcel 2 to activities which do not result in excavation below the two foot clean-fill layer.

Site ICs have not yet been put in place as all former owners or operators appear to be defunct/deceased and the Town has not expressed a willingness to move on tax foreclosure. Despite this, EPA Region 1 made significant efforts since the last FYR in December 2009 in attempting to implement ICs at the Site. In 2010 and 2011, representatives from EPA, the NHDES, and the NHAG attempted to secure formal AURs by the Town which holds a tax lien on the Site property. However, those efforts to finalize AURs were not ultimately successful. Also, in 2013 and 2014, EPA communicated with representatives of the Town regarding the development and approval of a Site-specific ordinance to restrict the use of soil and groundwater at and around the Site. Those efforts, too, failed to produce tangible results. At this time, EPA is considering available options for engaging with officials from the State of New Hampshire and/or the Town on an effective process for selecting and then implementing adequate ICs for both soil and groundwater at the NHPC Site.

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

NO. Some human health and ecological toxicity values have changed since the 1996 RI report, but the changes do not affect protectiveness, as described below.

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

A baseline risk assessment was included in the remedial investigation (RI) Report dated 1996. The hazard indices in the baseline risk assessment were re-calculated using the revised dermal adherence factor and the revised results were presented in the 1998 ROD.

Land use relative to the Site has not changed subsequent to the EPA issuing the 1998 ROD or the first FYR (2009). Remedial activities (soil excavation, soil treatment by chemical fixation, consolidation of treated soil and crushed monolith materials into the former lagoons, and soil cover installation over the treated soil backfill) have been conducted at the Site after the submittal of the 1998 ROD. The contamination levels should have been reduced, and consequently the associated risks would have been mitigated by the remedial activities. Soils within the former building area, lagoon 1, southern wetland area (SWA), lagoon 2, lagoon 3 and 4, and northern wetland area (NWA) that exceeded the cadmium cleanup levels established in the ROD were excavated and treated onsite. This was based on confirmation sampling and statistical analysis of these results (see Source Control Remedial Action report in Section 5.0). The only issue was achievement of the ROD cadmium cleanup level in what was the NWA, now part of the detention basin, where statistical analysis of confirmation testing showed average cadmium levels in untreated soils to be 3.92 ppm (vs. the ROD cleanup number of 1.78 ppm). Subsequently, the 3.92 ppm cadmium level in the NWA was adopted as the cleanup level in this area (See the 2007 Explanation of Significant Differences [ESD]). However, three sidewall sample confirmation locations in the NWA were still above the ecological receptor cleanup level for the site set in the ROD at 5.6 ppm for the shrew (selected as the most sensitive representative ecological receptor). Page 5-5 of the Source Control RA report states that "a partial cover was placed over these locations to prevent access by ecological receptors. The average cadmium concentrations of the NWA uncovered residual untreated soils is 2.06 ppm, lower than the 5.6 ppm ecological cleanup level."

As a conservative approach, the 1996 RI and the 1998 ROD were reviewed with the assumption that the exposure point concentrations (EPCs) used in the baseline risk assessment are still representative of the current Site conditions. Based on the review, it has been concluded that the exposure assumptions remain valid or remain conservative (protective for human health and the environment) with some exceptions noted in this section. Groundwater underlying and downgradient of the Site is not currently used as a drinking water supply source and there are no private domestic wells within the Site[6]. No change in Site conditions has been identified which would warrant a re-evaluation of risk. No new sources of contamination were identified during this FYR.

Toxicity values for multiple COCs identified in the baseline human health risk assessment have since changed. The changes in the toxicity values summarized in **Table 5** would not change the overall risk characterization conclusions presented in the 1996 RI Report. That is,

- Soil in the northern wetlands would not pose significant risks to potential trespassers and industrial workers.

[6] JCI has a bedrock water supply well that is used for non-contact cooling water in its manufacturing process.

- Soil in the other areas including Lagoon 1, Lagoon 2, Lagoons 3 and 4, the southern wetlands, and the NHPC building area could pose significant risks to potential receptors; however, these areas have been excavated and treated and are currently covered with a re-vegetated permeable soil fill. The former wetland areas (northern and southern wetland) are fenced, are currently used as a storm water control system, and are wet most of the time; therefore, soil in these above areas is not considered accessible to humans under the current use scenario or accessible to significant ecological receptor populations. Risks associated with soil in these areas under the future use scenario are anticipated to be mitigated via institutional controls at the Site.
- Groundwater would still pose significant risks to potential receptors if impacted groundwater were used as domestic water supply.
- Sediment in Horseshoe Pond and the Merrimack River would not pose significant risks to potential recreational users or ecological receptors.

Consequently, toxicity value changes would not change the overall remedy and risk management strategy presented in the 1998 ROD.

The additional data collected after the submittal of the first FYR are summarized and evaluated in this FYR.

It should be noted that the maximum lead concentration of 3,742 milligrams per kilogram (mg/kg) was detected by the XRF method at NHP-SL-Bn-475-4. It should be noted that XRF method is normally used as a screening tool relative to the laboratory analytical method and is not suitable for use in risk assessment. The 1996 baseline risk assessment pointed out in Section E.5 that *"lead concentrations in soil samples from Lagoon 2 and the Southern Wetland exceed an EPA Benchmark of 1,000 ppm (a benchmark for lead in industrial soil);"* however, it should be noted that the majority of the Site (including the SWA) has since been excavated and treated and covered with a re-vegetated, permeable soil fill. The wetland areas (northern and southern wetland) are fenced, are currently used as a storm water control system, and are wet most of the time; therefore, soil in the southern wetland area is not considered accessible to humans or ecological receptors under the current use scenario. Discussion between EPA, NHDES and the Town are on-going to determine the steps needed to implement ICs for the Site.

The following summarizes pertinent information reviewed as part of this FYR supporting the above conclusions.

Review of Interim Cleanup Levels

Interim Cleanup Levels were identified in the 1998 ROD for groundwater based on Safe Drinking Water Act Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs), and New Hampshire AGQS. The first FYR in 2009 updated the ICL for arsenic (from 50 µg/L to 10 µg/L) based on the MCLs in 2009.

As part of this FYR, current EPA MCLs and MCLGs and the AGQS published by the NHDES in 2013 were reviewed. During this FYR period (i.e., between 2009 and 2014), the standards were updated for manganese and chloroform. The recommended revised ICLs based on the updated groundwater standards are summarized in the table below (with the values revised from the 1998 ROD highlighted).

Table 6. Groundwater Interim Cleanup Levels - Revised

Contaminants of Concern	Former Interim Cleanup Level	Revised Interim Cleanup Level (µg/L)	Basis
Arsenic	50	10	MCL/NH GW-1
Cadmium	5	5	MCL/NH GW-1
Chromium	100	100	MCL/NH GW-1
Cyanide	200	200	MCL/NH GW-1
Lead	15	15	Action Level/NH GW-1
Manganese[1]	None established	300	EPA Drinking Water Health Advisory
Nickel[2]	100	100	NH GW-1
1,1,1-Trichloroethane	200	200	MCL/NH GW-1
1,1-Dichloroethene	7	7	MCL/NH GW-1
1,2-Dichloroethene	70/100 (cis/trans)	70/100 (cis/trans)	MCL/NH GW-1
1,2-Dichloroethane	5	5	MCL/NH GW-1
Chloroform	100	70	MCLG/NH GW-1
Trichloroethene	5	5	MCL/NH GW-1
Tetrachloroethene	5	5	MCL/NH GW-1
Vinyl Chloride	2	2	MCL/NH GW-1

Notes:
1. Highlighted values were revised from the 1998 ROD.
2. Nickel has been remanded back to EPA for further regulation.

Review of Follow-Up Actions Recommended In the First FYR

As part of the first FYR, EPA in 2009 recommended the following follow-up actions for the Site:

- To implement institutional controls, including the establishment of a groundwater management zone;
- To further evaluate vapor intrusion exposures; and
- To evaluate ecological effects to benthic invertebrates by metals at the transition zone in the Merrimack River and Horseshoe Pond.

After the first FYR, additional investigations were conducted to further evaluate the potential vapor intrusion pathway and the ecological effects to benthic invertebrates by metals at the transition zone in the Merrimack River and Horseshoe Pond. The results of these additional investigations are presented in the GZA (2013) 2012 Summary Report and the GZA (2014) August 2013 Annual Monitoring & Supplemental Investigation Report, respectively, and summarized below.

Potential Vapor Intrusion Pathway

Currently, there is no building on the NHPC property; therefore, exposure to indoor air potentially impacted by the vapor intrusion pathway is not considered a complete pathway for the current use on the NHPC property. Potential risks associated with the vapor intrusion pathway for the future use will be controlled by ICs.

The highest TCE concentrations in the shallow overburden groundwater have been located within the southernmost portion of the NHPC Site at wells NHP_MW-302S (ranged between 3.8 µg/L to 123 µg/L between April 2008 and July 2014) and NHP_MW-308S (ranged between non-detect to 201 µg/L between April 2008 and July 2014). This area with elevated TCE concentrations in shallow groundwater has been shown to extend off site to the southeast to the New England Pole site well MW-302 (ranged between 20 µg/L and 32 µg/L between November 2009 and November 2013). Based on consultation with NHDES and EPA, two structures were identified by EPA on the New England Pole property (6 Wright Avenue) that necessitated further evaluation.

During July 2012, EPA conducted indoor air and sub-slab soil gas sampling from the two identified structures (i.e., the Patterson Office and the rental office) to evaluate the potential vapor intrusion pathway, and performed concurrent groundwater sampling and analysis from selected wells proximate to the two structures. EPA collected indoor air samples from locations within the basement and first floor of the Patterson office building and from the ground floor of the rental office building. Sub-slab soil gas samples were also collected from the Patterson office building. The rental office building was constructed on piers with no concrete slab or crawl space and, therefore, no sub-slab soil gas samples were collected from the rental office building. Detailed information of the 2012 sampling is included in Appendix C of the GZA (2013) report.

EPA conclusions based on the 2012 sampling are included in the GZA (2013) report and are summarized as follows:

- TCE, 1,1-Dichloroethene, trans 1,2 DCE, 1,2 DCA, and VC were not detected in the indoor air samples above the EPA regional screening levels (RSLs)[7] for commercial/industrial use, and were not detected above laboratory RLs in sub-slab soil gas. It was concluded that the data results indicated for each of the contaminants that "*soil gas was not present underneath the building*";
- PCE was not detected in the indoor air samples above the EPA RSL for commercial/industrial use; while PCE was detected at a concentration of 1.2 micrograms per cubic meter (µg/m^3) in one of the sub-slab soil gas samples. The sub-slab soil gas concentration detected was well below the applicable PCE indoor air RSL of 18 µg/m^3. It was concluded that the "*data shows that soil gas migration into the building may be occurring, but not significantly to cause risk*";

[7] Unless otherwise noted, the RSLs discussed in this FYR are the risk-based concentrations for industrial/commercial uses either correspond to a hazard quotient of 0.1 or correspond to a cancer risk of 10^{-6}, whichever lower.

- 1,1,1-tricholoroethane was detected in the indoor air samples at various concentrations within the Patterson Building; however, all concentrations were well below the RSL for 1,1,1-tricholoroethane. 1,1,1-tricholoroethane was also detected in the sub-slab soil gas sample; however at a concentration well below the RSL for indoor air. It was concluded that the "*indoor air and sub-slab soil gas data shows higher concentrations inside the building than underneath resulting in an attenuation factor greater than 1. This suggests that background sources may be influencing the attenuation factor. In these cases sub-slab soil gas concentrations are not an indicator of vapor intrusion*"; and
- Chloroform was detected in the indoor air samples at various concentrations within the Patterson Building; however, all concentrations were well below the RSL for chloroform. Chloroform was not detected above the RL in the sub-slab soil gas sample. It was concluded that "*considering the sub-slab data shows higher concentrations inside the building than underneath suggesting that background sources within the building may be contributing to the indoor levels and not from sources related to the site.*"

Based on the findings, EPA concluded that no further assessment of the potential vapor intrusion pathway at these locations was warranted.

As part of this FYR, RSLs listed in the EPA (2012) Commercial Properties Indoor Air Soil Vapor Intrusion Study Report and used in the 2012 assessment of the Site were compared against the current[8] RSLs. The RSLs listed in the EPA (2012) report remain consistent with the current RSLs except that there are no RSLs available for cis-1,2-dichloroethene or trans-1,2-dichloroethene in the current EPA RSL table. The EPA (2010) Toxicological Review of cis-1,2-Dichloroethylene and trans-1,2-Dichloroethylene indicated that "*in the absence of repeat-dose toxicity studies, the available inhalation data for cis-1,2-DCE do not support derivation of an RfC…the available inhalation data…were considered insufficient to support reference value derivation and, therefore, an RfC for trans-1,2-DCE was not derived.*" Based on this review, EPA concluded that the vapor intrusion pathway at the downgradient properties previously assessed is not a pathway of concern.

It should be noted that the TCE levels in the off-Site shallow groundwater wells (e.g., MW-108S, MW-203S, and MW-204S on the Windsor Industries and Transport, Inc. properties) were noted above the EPA vapor intrusion screening level (VISL)[9] during one or more sampling rounds. The evaluation of potential vapor intrusion pathway for the buildings on these two properties were not included in the EPA 2012 study. EPA and NHDES specifically excluded these two properties due to the fact that there are multiple VOC sources on those properties and consequently it would be difficult to determine / segregate contributions from the NHPC Site.

[8] May 2014 version.

[9] Calculated using the VISL Calculator version 3.3.1, May 2014 RSLs as 7.4 µg/L for the commercial use scenario for TCE, corresponding to a target hazard quotient of 1 or a target cancer risk of $1x10^{-6}$.

Ecological Effects to Benthic invertebrates by Metals at the Merrimack River and Horseshoe Pond Transition Zone

In 2010, GZA collected pore water samples within the transition zone between groundwater and surface water in the Merrimack River and Horseshoe Pond. EPA provided a technical review of the sediment pore water data and in a memorandum dated March 9, 2011, EPA concluded that "*the monitoring results suggest that toxic effects may be occurring in benthic infaunal (sediment dwelling) aquatic organisms due to metals in pore water.*" EPA recommended that "*sediment toxicity tests be conducted to determine whether the sediments are actually toxic to freshwater benthic test organisms (midge larvae and amphipods).*"

In order to provide data to address this concern, additional co-located groundwater, surface water, and sediment pore water sampling was conducted during the August 2013 monitoring activities. EPA provided a technical review of the sediment pore water data. Relative to surface water and sediment, none of the detected chemicals exceeded available surface water quality criteria and relevant ecological risk based criterion (TEC) included in the National Oceanic and Atmospheric Administration (NOAA) SQuiRT Tables[10], respectively. Based on EPA's assessment of the data collected by GZA, EPA concluded in a memorandum dated January 30, 2014 that "*Although some NRWQC of cadmium, lead, and nickel were exceeded, the SEM/AVS 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.*"

A detailed discussion of the August 2013 sediment pore water results and the EPA's review are included in the GZA (2014) August 2013 Annual Monitoring & Supplemental Investigation Report.

Review Of Changes In Toxicity Values Used In Human Health Risk Assessment

Changes of toxicity values for the identified COCs at the Site are summarized in **Table 5** and briefly discussed in this Section. The following changes would result in elevated risk estimates relative to the 1996 risk results:

- Benzene, 1,1-dichloroethane, 1,2-dichloroethane, iron, thallium, 1,1,1-trichloroethane, and vinyl chloride. No oral reference dose (RfD) values were used in the 1996 baseline risk assessment for these listed COCs[11]. Oral chronic reference dose values are currently

[10] Buchman, M.F., 2008. NOAA Screening Quick Reference Tables (SQuiRT), NOAA OR&R Report 08-1, Seattle WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration. "TEC" is Threshold Effect Concentration, which is consensus-based and incorporates the Ontario Ministry of the Environment lowest-observed effect levels (Persaud et al. 1993) as well as data from up to five other sediment quality guidelines (when available), including: threshold effects levels (TELs) (Smith et al. 1996); effects range-low (ER-L) values (Long and Morgan 1991); TELs for Hyalella azteca in 28 day tests (TEL-HA28) (U.S. EPA 1996a; Ingersoll et al. 1996); minimal effect thresholds from EC and MENVIQ (1992); and chronic equilibrium partitioning thresholds (SQAL) (Bolton et al. 1985; Zarba 1992; U.S. EPA 1997a).

[11] Table 6-1 of the RI report indicated a RfD of 0.1 mg/kg-day for 1,1-dichloroethane. However, RfD was presented as "NA" in the risk calculation sheet for groundwater. Therefore, non-cancer risks for 1,1-dichloroethane were not evaluated for groundwater in the 1996 baseline risk assessment.

available for these COCs either through the EPA Integrated Risk Information System (IRIS) or the Provisional Peer Reviewed Toxicity Values for Superfund (PPRTV) database;

- Aroclor 1254, chromium (VI), 1,1-dichloroethane, ethylbenzene, methyl-t-butyl ether, and trichloroethene. No Cancer Slope Factor (CSF) values were used in the 1996 risk assessment for these listed COCs. Oral CSF values are currently available for these COCs either through the EPA IRIS database or the California[12] or New Jersey[13] guidance;
- Beryllium, chromium (VI), cobalt, cyanide, cis-1,2-dichloroethene, manganese, methylene chloride, nickel, tetrachloroethene, trichloroethene, toluene, vanadium, and total xylenes. The current RfD values by the IRIS, PPRTV, or the California guidance[14] for these COCs are lower than the RfD values used in the 1996 risk assessment; and
- Benzene and chloroform. The current cancer slope factor values listed in the IRIS or the California[15] guidance are higher than the CSF values used in the 1996 risk assessment.

The toxicity values for the other COCs are either the same or less stringent compared to the toxicity values presented in the 1996 RI; and consequently the changes would result in lower estimated risk results relative to the 1996 risk results. As a result, in this FYR the focus has been on evaluating the impacts to the risk assessment results due to the changes of the toxicity values for the above referenced COCs. The evaluations are presented below for groundwater, soil, sediment, and surface water, respectively.

Groundwater

For groundwater, the RI and ROD concluded that groundwater from the Site could pose significant risks to future receptors who would use groundwater as tap water. The predominant risk drivers included 1,1-dichloroethene, 1,2-dichloroethene, chloroform, tetrachloroethene, trichloroethene, vinyl chloride, cadmium, manganese, nickel, and arsenic[16]. With the exception of the RfD for 1,1-dichloroethene and the CSF values for 1,1-dichloroethene, tetrachloroethene, arsenic, and vinyl chloride, the toxicity values for the above referenced predominant risk driver COCs are either more stringent or the same as the toxicity values used in the RI and ROD. As a result, COCs in groundwater are still expected to pose significant risks to future receptors who would use Site groundwater as tap water. The ROD concluded that the basis for groundwater

[12] Hot Spots Unit Risk and Cancer Potency Values published by the Office of Environmental Health Hazard Assessment (updated 2011).

[13] Alan Stern (2009) Derivation of Ingestion-Based Soil Remediation Criterion for Cr+6 Based on the NTP Chronic Bioassay Data for Sodium Dichromate Dihydrate.

[14] Chronic Reference Exposure Level published by the Office of Environmental Health Hazard Assessment (as of June 2014).

[15] Hot Spots Unit Risk and Cancer Potency Values published by the Office of Environmental Health Hazard Assessment (updated 2011).

[16] According to the 1998 ROD (Table 6), these COCs would either result in a hazard quotient above one or an excess lifetime cancer risk above 10^{-4}. According to the 1996 RI report (Section 6.5.3.2), hazard quotients for 1,1-dichloroethene, 1,2-dichloroethene, chloroform, tetrachloroethene, trichloroethene, arsenic, cadmium, manganese, and nickel exceeded unity.

remediation is unacceptable human health risks for future use and exceedances of MCLs. The changes of the toxicity values would not impact the overall remedy selected for Site groundwater.

Soil

For soil, among the listed COCs of which the current toxicity values are more stringent, beryllium, cobalt, cyanide, iron, manganese, methylene chloride, nickel, vanadium, and Aroclor 1254 were identified as soil COCs for the RI and ROD[17]. The maximum concentrations detected in Site soil were compared against the EPA RSLs for industrial soil for the above referenced COCs and the results are summarized in the table below. As shown in the table below, the maximum detected concentrations for these COCs were below the EPA RSLs for industrial soil, with the exception of cyanide. Industrial RSLs were used because the anticipated future use is industrial/commercial and residential use will be prevented by institutional controls.

Table 7. Soil Risk Screening

Contaminants of Concern	Maximum Detected Concentration (mg/kg)[1]	RSL for Industrial Soil (mg/kg)[2]
Beryllium	1.4	230
Cobalt	8.6	35
Cyanide	509	13 ~ 230 (calcium cyanide, free cyanide, cyanogen, hydrogen cyanide, potassium cyanide, sodium cyanide, and thiocyanates) 580 ~ 12,000 (copper cyanide, cyanogen bromide, cyanogen chloride, potassium silver cyanide, and silver cyanide)
Iron	18,500	82,000
Manganese[1]	309	2,600
Methylene Chloride	0.11	320
Nickel	214	1,100 ~ 2,200 (depending on speciation)
Vanadium	34.9	580
Aroclor 1254	0.081	1

Notes:
1. The maximum detected concentrations from the ROD (Table 1).
2. The RSLs from the EPA RSL table last updated in May 2014. The RSLs are corresponding to either a hazard quotient of 0.1 or a cancer risk of 10^{-6}, whichever lower.

For cyanide, depending on the speciation, the RSLs range between 13 mg/kg and 230 mg/kg for calcium cyanide, free cyanide, cyanogen, hydrogen cyanide, potassium cyanide, sodium cyanide, and thiocyanates while the RSLs range between 580 mg/kg and 12,000 mg/kg for copper cyanide, cyanogen bromide, cyanogen chloride, potassium silver cyanide, and silver cyanide. Cyanide speciation in Site soil has not been evaluated. Based on the cyanide transport mechanism in the environment, the relatively toxic cyanide compounds (i.e., calcium cyanide, free cyanide, cyanogen, hydrogen cyanide, potassium cyanide, sodium cyanide, and thiocyanates) are not expected to persist in soil based on the rationale summarized below.

[17] Based on Table 1 included in the ROD.

- For hydrogen cyanide, according to the ATSDR (2006), *"At soil surface, volatilization of hydrogen cyanide is a significant loss mechanism for cyanides… Volatilization of hydrogen cyanide would be a significant loss mechanism for cyanides from soil surfaces at a pH<9.2"*. *According to the RI (Section 7.4.1), "Results for seven soil samples collected for pH analysis in 1993 from the 0 to 2 feet depth interval in the WLS area detected a pH range of 5.52 to 6.72, with an arithmetic average of 6.19"*. In addition, the maximum detected cyanide concentration (509 mg/kg) was detected in a surface soil sample from the Southern Wetland Area (NHP-S-SWA-01-1). Based on the above discussion, hydrogen cyanide in surface soil is expected to volatilize and not be persistent.
- For cyanogen, according to the ATSDR (2006), *"In general…the highly volatile gases hydrogen cyanide, cyanogen, and cyanogen chloride… would not be expected to be present in sediment or soil in any appreciable amount."* As a result, cyanogen in surface soil is expected to volatilize and not be persistent.
- For thiocyanates, according to the ATSDR, *"Although the fate of thiocyanate in soil is largely uncharacterized, there is evidence to suggest that thiocyanate is not persistent in soils. Early studies have shown that thiocyanate can undergo both aerobic…and anaerobic microbial degradation…"* As a result, thiocyanates in soil are not expected to persist.
- For calcium cyanide, free cyanide, potassium cyanide, and sodium cyanide, according to the ATSDR, *"Some simple cyanides are soluble in water (sodium cyanide, NaCN; potassium cyanide, KCN; and calcium cyanide, $Ca(CN)_2$)"*. As a result, calcium cyanide, free cyanide, potassium cyanide, and sodium cyanide would be leached to groundwater and therefore are not expected to persist in soil, especially surface soil.

Based on the above discussions, it is concluded that cyanides in Site soil, especially surface soil, are expected to be those cyanides with toxicity values of less concern. As a result, the maximum detected cyanide concentration in Site soil is not expected to exceed the RSLs for industrial use.

As the maximum detected concentrations of the identified COCs (with current toxicity values more stringent than the toxicity values used in the RI/ROD) do not exceed the corresponding EPA RSLs for industrial use, none of the toxicity value changes would change the overall No Significant Risk conclusion for the current Site use. It should be noted that the majority of the Site was excavated and treated soil has been covered with a permeable soil fill and has been re-vegetated. The former wetland areas (northern and southern wetland) are fenced, are currently used as a storm water control system, and are wet most of the time; therefore, soil at the Site is not considered accessible to humans and ecological receptors under the current use scenario. Human health risks associated with soil under the future use scenario are anticipated to be mitigated via institutional controls at the Site.

Sediment

For sediment, among the listed COCs of which the current toxicity values are more stringent, only 1,1,1-trichloroethane, beryllium, cobalt, manganese, nickel, and vanadium were identified as sediment COCs for the RI and ROD[18].

Based on the review of the baseline risk assessment[19], it can be concluded that the changes of the toxicity values would not change the overall No Significant Risk conclusion for sediment exposure at the Site. Sediment concentrations are often screened against residential soil RSLs as a preliminary conservative screening because incidental exposure to sediment is much lower than residential exposure to soil. The maximum concentrations of all COCs except benzo(a)pyrene and arsenic in sediment from the 1996 RI (Table 6-22B) do not exceed residential soil RSLs, and the cancer risks associated with these two chemicals are 6E-06 for benzo(a)pyrene and 2E-05 for arsenic, both lower than EPA's maximum acceptable risk (1E-04).

Surface Water

Risks associated with surface water exposure were not quantitatively evaluated in the baseline risk assessment. According to the RI, surface water sampling did not indicate that the river was impacted and exposure pathways were not considered to represent primary routes of exposure to Site-related contaminants.

Review of Additional Data Collected After First FYR

Additional data collected since the last FYR is summarized below and focuses on groundwater, sediment, and surface water data.

Groundwater

A summary of the analytes detected between 2007 and 2014 is included in **Table 3**. Three analytes (benzene, 1,1-dichloroethane, and 1,4-dioxane) were not previously identified as COCs in groundwater as the baseline risk assessment[20] used maximum detected concentrations above the EPA RSLs for drinking water. The following provides a summary of the concentrations detected and recommendations for inclusion as a Site COC.

- 1,4-Dioxane was detected in 27 wells out of 54[21] wells and the maximum concentration (21 µg/L) was detected at well NHP_JCMW-2D in October 2010 in one of the field duplicate samples. The maximum detected concentration was above the EPA RSL for drinking water (0.78 µg/L) and the AGQS[22] (3 µg/L).

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[18] Based on Table 6-6 included in the RI.

[19] RI Volume 2 of 4 – Tables, Sediment Tables - Table 6-22A through Table 6-23B.

[20] As indicated in the 1998 ROD, "Interim cleanup levels have been established in groundwater for all organic and inorganic contaminants of concern identified in the Baseline Risk Assessment found to pose an unacceptable risk to either public health or the environment.

[21] 1,4-Dioxane was not analyzed for MW-301 or MW-302.

[22] MCL is not available for 1,4-dioxane.

1,4-Dioxane was not previously analyzed in groundwater and therefore was not included in the 1996 baseline risk assessment. Due to the relatively high detection frequencies (27 out of 54 wells) and relatively high concentrations, 1,4-dioxane should be included as a groundwater COC and an appropriate cleanup goal established.

- 1,1-Dichloroethane was detected in eight wells (i.e., NHP_MW-108S, MHP_MW-203S, MW-301, NHP_MW-302S, MW-302, NHP_MW-303S, NHP_MW-308S, and NHP_MW-309S) out of 56 wells. The detected concentrations ranged between 2 µg/L and 28 µg/L. The maximum detected concentration was above the EPA RSL for drinking water (2.7 µg/L) but below the AGQS[23] (81 µg/L).

  1,1-Dichloroethane was included in the 1996 baseline risk assessment as a groundwater COC. However, although an RfD value (0.1 mg/kg-day) was listed in Table 6-1 of the RI report for 1,1-dichloroethane, the RfD for 1,1-dichloroethane was listed as "NA" (not available) in the risk calculation sheets (included in Volume 2 of the RI report). As a result, non-cancer risks for 1,1-dichloroethane were not evaluated in the 1996 baseline risk assessment. In addition, the cancer slope factor was listed as "NA" in the 1996 baseline risk assessment and consequently cancer risks for 1,1-dichloroethane (and 1,4-dioxane) were not evaluated. As such, 1,1-dichloroethane was not identified as a predominant groundwater risk driver and no ICL was identified for 1,1-dichloroethane in the ROD. The 1,1-dichloroethane groundwater EPC listed in the 1996 RI (3,500 µg/L, the maximum detected concentration) would result in significant risks using the current toxicity values and therefore should be added to the groundwater predominant risk driver list. 1,1-dichloroethane should be included as a groundwater COC, and an appropriate cleanup goal established.

- Benzene was detected in MW-302 (1 µg/L in November 2009 and 2 µg/L in November 2011) and in NHP_MW-310S (2.4 µg/L in May 2007, 2.1 µg/L in August 2009, and 4 µg/L in October 2011), 2 out of 56 wells. The detected concentrations ranged between 1 µg/L and 4 µg/L, above the EPA RSL for drinking water (0.45 µg/L) but below the MCL (5 µg/L).

  Based on the low detection frequency (2 out of 56 wells) and the low concentrations (below the MCL), benzene is not proposed to be included as a groundwater COC at the Site at this time. Continued monitoring of benzene concentrations in Site groundwater is appropriate and will be re-evaluated as part of the next FYR. It should be noted that for one well location (MW-302, which is located within the New England Pole property), a historical petroleum release at this property has resulted in petroleum contaminated groundwater. It is unclear at this time if the benzene concentration in groundwater samples from MW-302 is Site related.

Sediment

Six sediment samples were collected as part of the August 2013 investigation of sediment pore water and evaluation of metal impacts to transition zones between groundwater and surface water in the Merrimack River and Horseshoe Pond. The sediment data are included in **Table 8**. With the exception of cadmium, the maximum detected concentrations among the 2013 sediment

[23] MCL is not available for 1,1-dichloroethane.

samples were lower than the maximum sediment concentrations presented in the 1996 RI, which were used as the EPCs for the baseline risk assessment. Cadmium was not identified as a COC for river and pond sediment in the 1996 baseline risk assessment. Cadmium was detected in the duplicate pair of samples collected from NHP_SED-108 at 0.3162 mg/kg and 0.3016 mg/kg, respectively. The detected concentrations were within two times the laboratory reporting limits and were much lower than the EPA RSL for residential soil (7 mg/kg). Therefore, the detected cadmium levels are not expected to pose significant risks to potential receptors.

Surface Water

Six surface water samples were collected as part of the August 2013 investigations of sediment pore water and evaluation of metal impacts to transition zones between groundwater and surface water in the Merrimack River and Horseshoe Pond. The surface water data are included in **Table 9**. No cyanide or metals of concern were detected in any of the surface water samples with the exception of manganese. Manganese was detected in the upstream sample (NHP_SW-UPSTRM) at 0.03 mg/L. The concentrations detected in the downstream samples were similar to the concentration detected in upstream, ranging between 0.029 mg/L and 0.032 mg/L). The additional surface water data confirmed no apparent impact to surface water from the NHPC site.

Review of Changes in Exposure Assumptions

For soil exposure, cadmium was identified within the 1996 RI risk assessment as a predominant non-cancer risk contributor. Arsenic and beryllium were identified as predominant cancer risk contributors. Comparison of the soil EPCs for all identified areas of concern (AOC) with the EPA RSLs identified the following:

- The cadmium EPC in former Lagoons 3 and 4 AOC was 1,250 mg/kg, which is above the EPA RSL[24] for industrial use (980 mg/kg), indicating potential risks to industrial workers (i.e., HI>1); however, the lagoons have been excavated, treated and covered.
- The cadmium EPC in the NHPC Building AOC (Phase I) was 265 mg/kg, which is above the EPA RSL[25] for residential use (70 mg/kg), indicating potential risks to future residents (i.e., HI>1); however, residential use will be prevented by land use controls.
- The arsenic EPC in the JCI AOC was 37.5 mg/kg, which is above the EPA RSL[26] for residential use (0.67 mg/kg) and for industrial use (3 mg/kg), indicating potential cancer risks to future residents of about 6E-05 (i.e. [37.5/0.67] x 1E-06) and a potential cancer risk to current/future industrial workers of about 1E-05 (i.e. [37.5/3] x 1E-06). Residential land use will be prevented by land use controls, and worker risk would be within EPA's acceptable risk range of 1E-04 to 1E-06.

[24] Corresponding to a hazard quotient of 1.
[25] Corresponding to a hazard quotient of 1.
[26] Corresponding to an excess lifetime cancer risk of $1x10^{-6}$.

The conclusions in the second and third bullets above are consistent with the 1998 ROD. The conclusion in the first bullet is different from the conclusions included in the 1998 ROD. The hazard index calculated from the 1996/98 risk assessment for the1998 ROD for the Lagoon 3 and 4 AOC for industrial workers is 0.75 (Reasonable Maximum Exposure) and 0.16 (Central Tendency Exposure). The higher risks identified in the above bullets for the Lagoon 3 and 4 AOC for industrial workers were a result of the variance between the exposure assumptions used in the 1996 RI and 1998 ROD and the default exposure assumptions now used by EPA. The exposure frequency used for industrial workers in the 1996/1998 baseline risk assessment was 150 days per year while EPA used a default exposure frequency assumption of 250 days per year for the RSL derivation.

It should be noted that extensive previously described remedial activities have been conducted on the property after the submittal of the 1998 ROD. As a result, the EPCs used in the baseline risk assessment overestimate the risks associated with the current conditions. In addition, current exposure to cadmium in former Lagoons 3 and 4 is not considered a complete pathway. This area is covered with a 2-foot soil cover. The former NHPC Building areas are currently not used for residential purposes. As a result, cadmium in former Lagoons 3 and 4 and the former NHPC Building areas is not a concern under the current use scenario. Future exposure to the elevated cadmium levels in former Lagoons 3 and 4 and former NHPC Building areas will be controlled by ICs.

Detected arsenic in soil at the JCI area is not considered related to historical release(s) at the NHPC property. Information indicates arsenic was not used in the plating process. In addition, the arsenic EPCs for the NHPC property (ranging from 5 mg/kg to 10.6 mg/kg) were much lower than the arsenic EPC for the JCI property (37.5 mg/kg). As a result, no additional actions are proposed for the Site.

Review of Changes In Risk Assessment Methods

While performing the review of the 1996 baseline risk assessment, which is the underlying basis for the ROD, certain discrepancies were noted between the risk assessment approach and the current EPA *Risk Assessment Guidance for Superfund*. The focus of this section relates to the discrepancies that could potentially impact the risk management conclusion and the remedies identified for the Site.

Groundwater COC Identification

Groundwater COCs were identified through a concentration-toxicity screen in the 1996 baseline risk assessment. Over time, due primarily to the change of toxicity values (including toxicity values that became available for compounds without toxicity values when the baseline risk assessment was conducted) and groundwater concentrations, COC identification should be reviewed and updated, as needed, given that ICs will be used to prevent use of groundwater for drinking. As an alternative screening approach, the groundwater concentrations could be compared with the EPA RSLs for drinking water. In this FYR, as discussed in the preceding section, 1,1-dichloroethane and 1,4-dioxane have been identified as additional groundwater COCs.

Receptors/Pathways/COCs Not Evaluated Quantitatively

A construction worker scenario was not evaluated in the 1996 risk assessment for potential exposure to soil, groundwater, surface water, and sediment. Future risks to construction workers and other receptors via exposure to excavated soil will be controlled through ICs, once implemented in coordination with the State/Town. It is anticipated that these ICs will include health and safety / soil management plans for any soil disturbance work (e.g., construction work).

The following pathways were not quantitatively evaluated in the 1996 baseline risk assessment for the identified receptors:

- Inhalation and dermal contact with drinking water;
- Inhalation of soil-derived dust; and
- Risks associated with lead.

Although risks associated with inhalation and dermal contact with groundwater when using groundwater as drinking water (future use scenario) were not evaluated quantitatively, ingestion risk of groundwater is clearly unacceptable without evaluation of these additional pathways, and monitoring of Site groundwater is on-going. Additionally, groundwater is not being used as a source of drinking water in the area and ICs are anticipated to be put in place to further prevent such use.

Due to the covered or vegetated nature of lagoons and wetlands, soil-derived dust levels are not expected to be significant and consequently risks via exposure to soil-derived dust are not expected to significantly impact the overall risk management decision.

Neither human health nor ecological risks associated with exposure to lead in soil, groundwater, and sediment were evaluated in the 1996 baseline risk assessment. Lead in groundwater will continue to be monitored and evaluated. The lead EPCs in surface soil (top 1 foot) are 16.9 mg/kg (Lagoon 1), 17 mg/kg (Lagoon 2), 31.5 mg/kg (Lagoons 3&4), 32 mg/kg (Northern Wetland), 536 mg/kg (Southern Wetland); 229 mg/kg (Building Phase I), 26 mg/kg (Building Phase II), and 169 mg/kg (JCI). The lead EPCs in surface and subsurface soil (top 10 feet) are 16.9 mg/kg (Lagoon 1), 164 mg/kg (Lagoon 2), 31.5 mg/kg (lagoons 3&4), 34.9 mg/kg (Northern Wetland), 536 mg/kg (Southern Wetland), 229 mg/kg (Building Phase I), 26 mg/kg (Building Phase II), and 169 mg/kg (JCI)[27]. The lead EPCs in all but one area were below the EPA human health benchmark of 400 mg/kg (for soil in residential areas). As a result, lead in soil is not expected to pose significant risks to potential human receptors at the Site. It should be noted that the maximum lead concentration of 3,742 mg/kg was detected by the XRF method (which is a screening type method generally not usable for risk assessment) at NHP-SL-Bn-475-4. The 1996 baseline risk assessment pointed out in Section E.5 that *"lead concentrations in soil samples from Lagoon 2 and the Southern Wetland exceed an EPA Benchmark of 1,000 ppm (a benchmark for lead in industrial soil)."* It should be noted that soil at the Site was excavated and the treated soil is covered and therefore exposure to lead impacted soil is not considered a

[27] Volume 2 of the RI.

complete pathway for either human or ecological receptors under the current use scenario. Future risks to construction workers and other receptors via exposure to excavated soil will be controlled through ICs, once implemented in coordination with the State/Town.

Risks Associated with Soil Dermal Exposure

The 1996 baseline risk assessment used EPA (1992) *Dermal Exposure Assessment: Principles and Applications, Interim Report* as the guidance for the evaluation of risks via soil dermal contact exposure. This interim report has been updated by the EPA (2004) *Risk Assessment Guidance for Superfund (RAGS) Human Health Evaluation Manual, Part E, Supplemental Guidance for Dermal Risk Assessment*. Based on a review of the RI and ROD, the overall assumptions used in the baseline risk assessment and the revised risk assessment in the ROD were conservative relative to the EPA (2004) guidance. However, a review of the RI Volume 2 Soil Tables indicated that risks via soil dermal contact were only evaluated for cadmium. Consequently, the risk results presented in the RI and ROD could have been underestimated due to the fact that only cadmium was evaluated for the dermal exposure pathway; however, it should be noted that the pathway is now incomplete under current conditions because the majority of the NHPC property is currently covered with a permeable soil fill and has been re-vegetated. The former wetland areas (northern and southern wetland) are fenced, are currently used as a storm water control system, and are wet most of the time. Therefore, NHPC property soil is not considered accessible to humans under the current use scenario. Surface soil at properties located within the greater study area is not considered significantly impacted by the historical release(s) associated with the former NHPC operations. Therefore, soil at the Site is not anticipated to pose significant risks to potential human receptors under the current use scenario. Future risks to construction workers and other receptors via exposure to excavated soil will be controlled through ICs, once implemented in coordination with the State/Town.

Screening Out COCs by Background Comparison

According to the RI (Section 6.2.1.5), aluminum was detected at concentrations similar to background and therefore was not selected as a soil COC. This approach is not consistent with the current EPA guidance. In 2002, EPA published *Role of Background in the CERCLA Cleanup Program*. In this document, EPA recommended *"a baseline risk assessment approach that retains constituents that exceed risk-based screening concentrations. This approach involves addressing site-specific background issues at the end of the risk assessment."* As a result, aluminum should not have been excluded from the risk assessment due to the similar levels compared to background; however, since the maximum aluminum concentration (16,900 mg/kg) was below the EPA industrial RSL (1,100,000 mg/kg), aluminum could be excluded as a soil COC based on the COC screening. In summary, the omission of aluminum from the soil risk assessment would not impact the overall protectiveness of the remedy.

<u>Expected Progress Toward Meeting RAOs</u>

Based on the findings presented above, the interim cleanup goals for groundwater remain reasonable, given that there are no known consumers of the groundwater as drinking water. However, evaluation of concentration trends and the effectiveness of the NA remedy for

contaminated groundwater at the Site indicated that clean-up goals may not be attained within the anticipated time frame established in the ROD (26 to 58 years after completion of the source control component).

Additional data from future sample events will improve the data set and provide a more comprehensive assessment of concentration trends in the groundwater and the effectiveness of NA to meet the RAOs. The restoration timeframe to attain the interim cleanup levels in the ROD as amended may likely take longer than anticipated. A revised cleanup time-frame for groundwater may be considered in the future based upon future sampling efforts.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

NO.

Technical Assessment Summary

In general, the remedy appears to be functioning as intended by the ROD based on the monitoring data collected at the NHPC Site since the 2009 FYR.

The soil cleanup goal for cadmium was based on potential for leaching to groundwater rather than direct contact with soil. In addition, the cleanup goal for cadmium, the only soil COC identified in the ecological risk assessment that could potentially pose significant risks to potential ecological receptors, in the top 2 feet below the land surface, was also based on protection of ecological receptors, and this cleanup goal is consistent with the cadmium leaching values. No other soil COCs that would pose significant risks to potential ecological receptors were identified in the ecological risk assessment. No information has come to light to question the methods underlying those calculations.

The ICLs for groundwater remain reasonable, given that there are no known consumers of the groundwater as drinking water. With few exceptions, the concentrations of COCs in groundwater appear to be relatively stable. Based on the data evaluation, cVOC NA has occurred and may be ongoing; however, rates of dechlorination are likely to be low to very low as a result of several limiting factors discussed above. Relative to metals in Site groundwater, DO and ORP data suggest generally oxidizing conditions in the shallow and deep flow systems. Under such conditions, cadmium and, to a lesser extent, nickel mobility may be promoted via oxidative dissolution of metal sulfides and/or decomposition of potentially-binding organic matter. Overall, contaminant concentration trends and NA indicator parameters suggest that the clean-up goals may not be attained within the anticipated time frame established in the ROD (26 to 58 years after completion of the source control component).

For the soil and management of migration remedy to be protective in the long-term, ICs are required to be established in accordance with the ROD to achieve the remedial objectives for the Site. ICs have not been established for the Site to date. Actions will need to be taken to ensure the protectiveness of the management of migration remedy in the long term.

V. ISSUES/RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Table 10: Issues and Recommendations/Follow-up Actions

OU #	Issue	Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness? (Y/N)	
						Current	Future
Entire Site	Institutional controls, including the establishment of a groundwater management zone, have not been implemented.	EPA to consider available options for engaging with officials from the State of New Hampshire and/or the Town on an effective process for selecting and then implementing adequate ICs for both soil and groundwater at the NHPC Site.	EPA/State	EPA/State	6/30/2016	No	Yes
Entire Site	Regulatory updates have been made for manganese, chloroform, and arsenic standards and additional groundwater COCs have been identified.	Completion of a Decision Document updating Site COCs and ICLs.	EPA/State	EPA/State	3/31/2016	No	Yes

In addition, the following are recommendations that may *reduce costs and accelerate site close out*, but do not affect current protectiveness and were identified during the FYR:

- ***Further evaluation of the effectiveness of the NA remedy for Site groundwater.*** Evaluate use of *in situ* remedial technologies to enhance remediation of VOCs and metals in overburden groundwater at the NHPC Site with consideration of background parameters. Consideration should be given to alternative technologies to accelerate contaminant destruction at the Site for the purpose of reducing the time period to achieve Site closure status.
- ***Further evaluation of stormwater flow at the NHPC Property.*** As indicated in this FYR, a concern has been raised regarding on-Site stormwater flow management and flooding of adjoining properties to the west as a result. Ponding of stormwater runoff and potential flooding impacts to two abutters of the NHPC property were observed; to a building associated with the Acme Power Washing property to the southwest and to a partially constructed road of the Synergy Self Storage property to the northwest. While it is unclear at this time, it appears that the source of stormwater runoff problems may potentially be from a combination of things, including the improper location and grading of a storm drain located along Wright Avenue, the grading along the NHPC property boundary following the construction phase of the remedy, the filling of a topographic depression in the back of the Acme Power Washing company, and the elimination of a

wetland along the border of the NHPC and Acme Power Washing properties. The stormwater flow management at the Site should be evaluated and if applicable, appropriate best surface water management practices will be put in place to prevent impacts to the adjoining properties.

- ***Fence Maintenance/Repair/Replacement.*** The fencing surrounding the site is in need of repair. Specifically, the northeastern corner of the NHPC property where a tree has fallen on and damaged the perimeter fence as well as in the southeastern corner of the property where the root ball of a fallen tree has uplifted and damaged the bottom of the fence. In addition, the fence along the northern end of the NHPC property, specifically along the northern edge of the drainage basin (that runs to the access road to Jones Chemical), is no longer present (across the drainage basin from the electrical station). This area should be evaluated and the fencing replaced, as warranted.

VI. PROTECTIVENESS STATEMENT

Site-wide Protectiveness Statement	
Protectiveness Determination: Short-term Protective	*Addendum Due Date (if applicable):*

Protectiveness Statement:

The remedy implemented at the NHPC Superfund Site is currently protective of human health and the environment, because the source control portion of the remedy included excavation, chemical fixation, and on-site backfilling of treated soils. In addition, treated materials were covered with a 2-foot permeable soil cover and re-vegetated to address potential human health and ecological exposures. With the source controls completed, groundwater quality is anticipated to be restored to acceptable levels through dilution and natural attenuation.

In order for the remedy to be protective in the long-term, however, the following ICs should be considered:

<u>To prevent exposures to contaminated groundwater</u>:

- Establish a GMZ (which will include the NHPC property and all surrounding properties with groundwater impacts from contamination originating from the NHPC site).
- Attach restrictions, or notices as appropriate, to deeds of the NHPC property and the properties within the designated GMZ or enact local ordinances to prohibit the potable use of untreated contaminated groundwater underlying the Site and within the GMZ.

<u>To prevent exposes to treated soils</u>:

- Attach restrictions to the deed of parcel 1 (the former NHPC building area) to ensure the future property use remains industrial/commercial.

- Attach restrictions to the deed of parcel 2 (the former lagoon area) to ensure the remaining wetlands are undisturbed and to limit any future use of the treated-backfilled portion of parcel 2 to activities which do not result in excavation below the 2-foot clean-fill layer.

VII. NEXT REVIEW

The next FYR report for the NHPC Superfund Site is required five years from the signature date of this review.

APPENDIX A

EXISTING SITE INFORMATION

A. SITE CHRONOLOGY

Table 11: Site Chronology

Event	Date
New Hampshire Plating Co. (NHPC) conducted electroplating operations on 13-acre parcel.	1962-1985
NHPC declared itself a hazardous waste disposal facility under RCRA.	1980
NHPC cited for violations of RCRA requirements.	1982
NHPC operations cease.	1985
Lagoon system stabilized, contaminated debris removed, and building cleaned under supervision of NHDES.	1987
Contaminated sludge and soil stabilized, capped, or disposed off-Site by EPA.	1990
Site placed on the National Priorities List.	1992
NHPC building decontaminated, demolished, and removed from the Site; underground storage tank removed.	1994
Remedial Investigation and Feasibility Study completed by EPA.	1996
Annual groundwater sampling by NHDES.	1997-2005 (except 1999)
38-acre Grassy Pond wetland in Litchfield, NH, acquired for wetland compensation.	May 1998
Proposed clean-up plan present to the public by EPA.	January 1998
Record of Decision signed.	September 1998
Pilot study of chemical fixation process completed.	2001
50-acre Green's Pond wetland in Merrimack, NH, acquired for wetland compensation.	September 2002
Final design for remedial action completed.	December 2002
Remedial action began.	November 2004
Town of Merrimack approved Property Reuse Plan.	January 2005
Major flood on the Merrimack River inundated Site.	May 2006
Preliminary Close-Out Report signed.	September 2006
Soil regrading and demobilization activities completed.	December 2006
Additional monitoring wells installed.	January-February 2007
Groundwater monitoring began.	May 2007
Explanation of Significant Differences for changed performance standard for cadmium in soils in northern wetland area was issued.	September 2007
First FYR completed.	December 2009
Island Drive wells interval sampling	August 2010
Sediment pore water sampling	August 2010
Passive diffusion bag sampling of select monitoring wells	September 2010
2010 annual groundwater sampling	October 2010
2011 annual groundwater sampling	October-November 2011
Transducer study at select well locations	November-December 2011
2010 Sampling Data Report	February 2012
2011 Summary Report	July 2012
EPA soil vapor intrusion study (groundwater and sub-slab soil gas sampling)	July 2012
Installation of NHP_MW-400 series wells	October 2012
Supplemental groundwater sampling	November 2012
Annual groundwater sampling	August 2013
Sediment pore water assessment	August 2013
2012 Summary Report	November 2013
August 2013 Annual Monitoring & Supplemental Investigation Report	April 2014
Annual groundwater sampling	July 2014
Closure of Island Drive and Litchfield monitoring wells	September 2014
Transducer study at select well locations	September-October 2014

B. BACKGROUND

Physical Characteristics

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

- To the south by Wright Avenue and beyond by a property owned by the Young Men's Christian Association;
- To the southwest by ACME Pressure Washing (formerly Aggregate Industries);
- To the east by Jones Chemical, Inc. (JCI) property and a rail road right-of-way; and beyond by Transupport, Inc. and Windsor Industries (Lot 22 owned by Combat Corp and Lot 22-1 owned by Equivise Ltd.); and
- To the southeast by the New England Pole and Wood Treating Company property.

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

The NHPC property 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 Site, approximately 600 feet south of the NHPC property. A majority of the NHPC Site is located within the 100-year floodplain, which considers a base flood elevation of 119 feet[28] (U.S. Department of Housing and Urban Development, 1979).

Hydrology

The subsurface soils encountered during the RI, in order from ground surface to bedrock, generally consist of alluvial sand deposits over glacio-lacustrine, 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 property, but are absent toward the east of the property, and appear to have been part of a deposit prograding from the west. The lower permeability glacio-lacustrine deposits were observed in the subsurface soils across much, but not throughout, the study area. The glacio-lacustrine deposits underlie the majority of the Site, but may be absent beneath the extreme western portions of the Site, and beneath areas toward the west and southwest of the Site. A roughly trough-shaped depression is present in the bedrock surface, between the former NHPC building and Horseshoe Pond, oriented in an approximately

[28] National Geodetic Vertical Datum

southwest-northeast direction, and 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.

During the 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, consisting of the alluvium deposits and saturated fill materials, bounded at depth by lower permeability glacio-lacustrine soils;
- A deep overburden hydrogeologic unit underlying the glacio-lacustrine deposit consisting of the glacial outwash sand deposits. This aquifer is semi-confined by upper (glacio-lacustrine) and lower (bedrock) hydraulic boundaries throughout most of the study area, except where the glacio-lacustrine deposits are absent. 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 origination. Within fractured crystalline bedrock, the orientation of hydraulically interconnected fractures can largely control the direction of groundwater flow.

Groundwater within the shallow and deep overburden hydrogeologic units predominantly flows in a southeasterly and easterly direction toward the Merrimack River. Refer to **Figure 5** and **Figure 6** for 2014 shallow and deep overburden estimated 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 7**); however, bedrock topographic, structural, and water quality data suggest fracture orientation and connectivity may result in groundwater flow toward the south, as well as toward the southeast and east. Upward vertical gradients were generally observed between hydrogeologic units in the southern and eastern portions of the study area. Downward vertical gradients occur in the northern and western portions of the study area between the shallow and deep overburden hydrogeologic units. Additional description of the Site can be found in Section 3.0 of the RI.

Land and Resource Use

The Site encompasses approximately 13 acres of vacant land, mostly grass covered (**Figure 1A**), in an area of mixed land use, including light industries and commercial businesses. Currently there is no active use of the NHPC property and no active use is planned for the near future. Several private residences and industries are located within a 2-mile radius of the Site. Water in the vicinity of the Site is obtained from the Merrimack Village District municipal water-supply system, with the exception of the Jones Chemical Company production well. Currently, there are no known human receptors for Site contamination.

History of Contamination

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 were discharged through a gravity-drained 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 meanderscars 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) during periods of high discharge from the facility. 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 and Conservation 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 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.

Initial Response

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.

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 of 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 VOCs and metals at concentrations higher than groundwater quality standards in the underlying hydrogeologic unit. Detailed presentations 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). Five soil metal COCs were identified as affecting groundwater quality including: cadmium, chromium, arsenic, lead, and nickel.

A Feasibility Study (FS) report (Brown and Root, 1997) evaluated five soil remedial alternatives and three groundwater response alternatives. The report evaluated the potential application of chemical fixation using a proprietary process to address the leaching of cadmium at the Site, the principal and representative soil COC. 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 soil concentrations that would leach metals of concern in excess of the federal MCLs or the NH AGQS included in Env-Or 600 *Contaminated Sites Management* (Env-Or 603.03).

Basis for Taking Action

Residual sources of metal and cyanide contamination that existed in soil as described in the ROD (EPA, 1998), included the following:

- Surface and subsurface soils in the Lagoon 1 area;
- Surface and subsurface soils in the embankments and basins of Lagoons 2, 3, and 4, the Southern Wetland, the Northern Wetland, and the Lagoon 4 overflow areas; and
- Subsurface soils in the building area.

Lagoon 1 soils contained the highest levels of metal contamination and were the largest residual source of groundwater contamination.

Several VOCs, semi-volatile organic compounds, and pesticides were all sporadically detected in soil throughout the Site, but were determined to be at concentrations below a level of concern and were not sources for groundwater contamination. The subsurface soils below the water table in the Lagoon 1 area were likely desorbing chlorinated VOC contamination to the groundwater.

The ROD-specified contaminants of concern (COCs) for soil are as follows:

- Arsenic;
- Beryllium;
- Cadmium;
- Chromium;
- Cyanide;
- Lead;
- Manganese; and
- Nickel.

The groundwater 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 (DCE); PCE; vinyl chloride (VC); TCA; cis- and trans-1,2-dichloroethene (DCE); 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). Manganese was detected in groundwater above the NH AGQS.

Site-related contaminants were not detected in surface water and sediments taken from Horseshoe Pond and the Merrimack River during the RI (EPA, 1998).

C. REMEDIAL ACTIONS

Remedy Selection

A ROD was issued in 1998 that identified the selected remedy to address the Site's contaminated soils and sediments 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 selected remedy 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 designed 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.

Remedial Action Objectives (RAOs) were formed to aid in the development and screening of alternatives to mitigate existing and future potential threats to public health and the environment. The RAOs stated in the 1998 ROD for soil are:

- Minimize contaminant leaching from soils that would result in groundwater contamination exceeding MCLs, state ambient groundwater quality standards (AGQS), or acceptable human health based levels; and

- Prevent contact by ecological receptors with soils having contaminant concentrations exceeding the ecological risk-based performance remedial goals (PRGs).

The COCs for soil were listed above under **Basis for Taking Action**, and the cleanup goals are presented below in **Table 12**. The remedial action for soil was completed in September 2006, as further discussed under **Remedy Implementation**.

The RAOs stated in the 1998 ROD for groundwater are:

- Prevent ingestion of groundwater containing contaminants at concentrations exceeding drinking water criteria;
- Minimize off-site migration of contaminants in the groundwater; and
- Minimize discharge of contaminated groundwater to the Merrimack River.

The COCs for groundwater were listed above under **Basis for Taking Action**, and the cleanup goals are presented below in **Table 12**.

Table 12. Contaminants of Concern and Associated AGQS and ROD ICL Criteria

COMPOUND	AGQS (µg/l)	ROD ICLs (µg/l)
1,1,1-Trichloroethane	200	200
1,1- Dichloroethene	7	7
1,2- Dichloroethene (cis/trans DCE)	70/100	70/100
1,2- Dichloroethane	5	5
Chloroform (Trichloromethane)	70	100
Trichloroethene (Trichloroethylene, TCE)	5	5
Tetrachloroethene (Tetrachloroethylene, PCE)	5	5
Vinyl Chloride	2	2
Cyanide	200	200
Arsenic	10	50
Cadmium	5	5
Chromium	100	100
Lead	15	15
Manganese	840	--
Nickel	100	100

Notes:
1. ROD ICLs = Interim Cleanup Levels found in the ROD.
2. AGQS = New Hampshire Ambient Groundwater Quality Standards, ENV-Or 600.
3. µg/l = Micrograms per liter
4. Cis-DCE = 70 µg/L and Trans-DCE = 100 µg/L
5. The arsenic AGQS changed from 50 to 10 µg/L in October 2001.

Remedy Implementation

The remedy was divided into source control and management of migration components. The RAOs for the source control component addressed both 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 concentration selected for the cleanup goals for soil were based on leaching calculations, and an ecologically-based limit for cadmium in the top 2 feet of soil.

Source Control

Source control activities included:

- Demolition of a solidified materials storage cell;
- Excavation of contaminated soils;
- Chemical fixation treatment of contaminated soils;
- Dewatering and water treatment in Lagoon 2;
- Backfilling treated soil;
- Final grading and covering; and
- Site restoration, landscaping, and sign installation.

The soil remedial action (RA) operations began in 2004. The soil remedy 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 backfill; and site grading to allow for possible future use of the remediated Site and to maintain flood storage capacity. During the soil RA, a total of approximately 95,000 tons of contaminated sludge and soil were 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, and land-use restrictions have been proposed to control future development and limit the potential for the clean soil cover to be breached. 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).

Soil excavation, treatment, and disposal reduced concentrations of contaminants of concern 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. 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. An Explanation of Significant Differences described this modification to the ROD (EPA, 2007).

Management of Migration

The activities that were conducted for the management of migration component of the remedy included:

- Annual monitoring of selected wells;
- Installation of two monitoring well couplets in the Town of Litchfield to determine if Site-related contamination extends beyond the Merrimack River;
- Monitoring residential wells across the Merrimack River in the Town of Litchfield to determine if Site-related contamination extends beyond the Merrimack River, and;
- Annual sampling of surface water.

A groundwater investigation to support the positioning of replacement monitoring wells for the site groundwater monitoring network was performed during October 2006. During January and February 2007, 26 monitoring wells were installed as part of the site groundwater monitoring network 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. Construction details for current Site monitoring wells are listed in **Table 13**.

Institutional Controls

Institutional controls (ICs) will minimize the possibility of exposure to contaminated soil and groundwater. The possible institutional controls include:

- Establishing a GMZ pursuant to the New Hampshire Code of Administrative Rule Env-Or 600.13.
- Attaching restrictions, or notices as appropriate, to deeds of the NHPC property and the properties within the designated GMZ or enacting local ordinances to prohibit the potable use of untreated contaminated groundwater underlying the Site and within the GMZ.
- Attaching restrictions to the deed of parcel 1 (the former NHPC building area) to ensure that future property use is restricted to non-residential use (e.g., industrial/commercial or open space).
- Attaching restrictions to the deed of parcel 2 (the former NHPC lagoon area) to ensure that the remaining wetlands are undisturbed and to limit any future use of the portion of the parcel with the treated-backfilled cover system to activities which do not result in excavation below the 2 foot clean-fill layer.

A proposed GMZ has been delineated, but has not been implemented as of the date of this FYR report. The proposed GMZ includes the properties to the east and south of the NHPC boundary. As of 2014, no deed restrictions have been placed on any of the NHPC properties.

Nonetheless, the potential for exposure at the NHPC property remains limited with no residential use, no disturbance of the wetlands or soil cover system, and no use of the groundwater for drinking water purposes.

System Operation/Operation and Maintenance

The first 10 years of Fund-financed operation of groundwater restoration measures are termed Long-Term Response Action (LTRA) activities (EPA 540-R-98-016, January 2000). After the initial 10-year period, the State funds the entire monitoring effort as operation and maintenance. See also Section 300.435(f)(3) of the NCP, 40 CFR § 300.435(f)(3). Several LTRA tasks are required at the NHPC Site to preserve the integrity of the groundwater monitoring network. In addition to the maintenance activities listed above in **Section II. Progress Since The Last Review** (System Operation/Operation and Maintenance (O&M) Activities), the LTRA tasks include:

- Inspection of the monitoring well network.
- Maintenance or replacement of monitoring well locks.
- Replacement of monitoring well protective casings or surface seals if damaged.
- Redevelopment of monitoring wells if sediment accumulates in well.
- Maintenance of the soil cover, parking areas, and perimeter Site fencing.
- Sampling and analysis of groundwater and surface water.

Annual O&M costs for the last five years have averaged $146,495, with overall costs decreasing over the last three years for a use average of $132,190 for that time period.

APPENDIX B

FIGURES

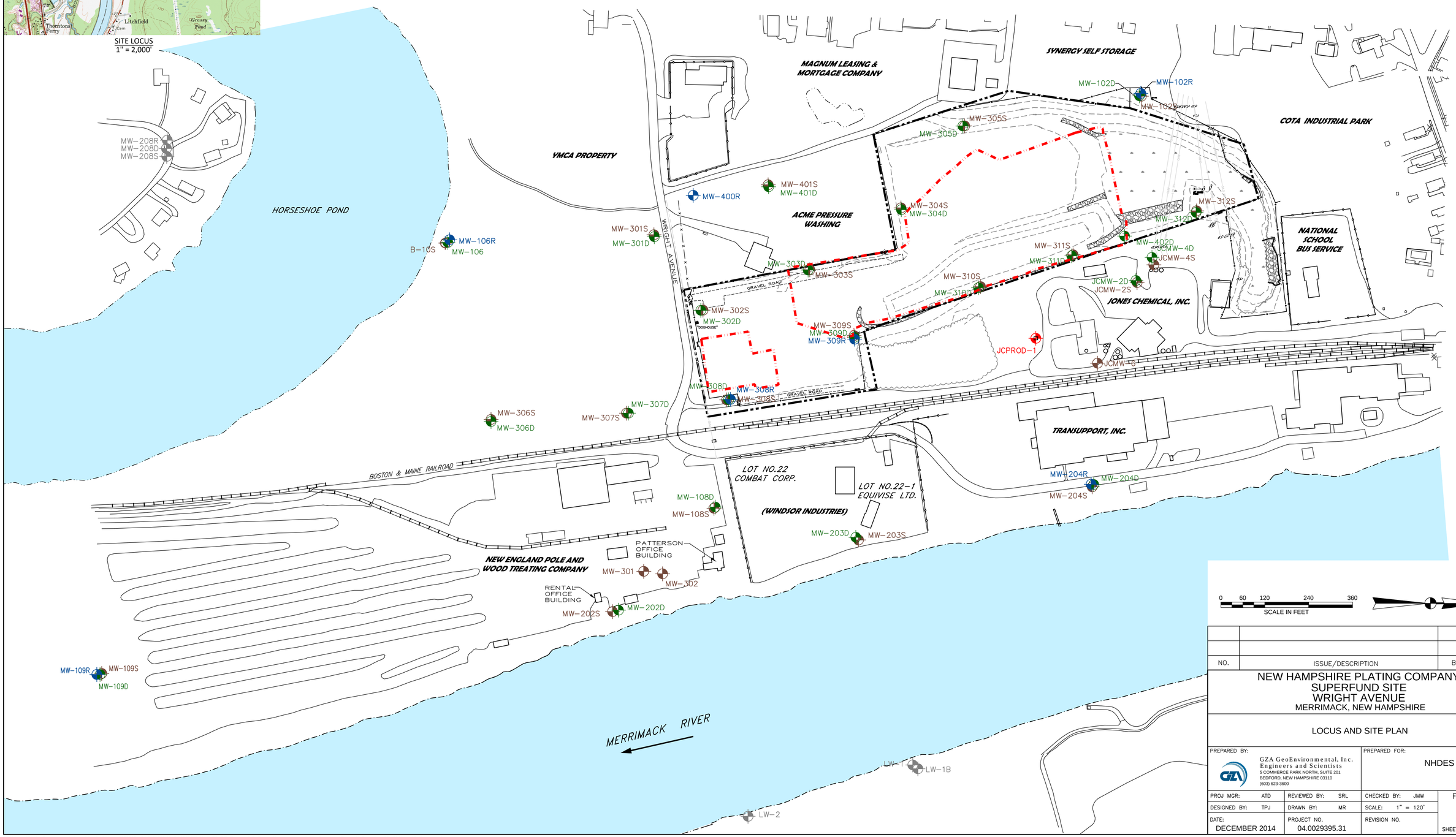
SITE LOCUS
1" = 2,000'

LEGEND:

- MW-102S — SHALLOW OVERBURDEN AQUIFER MONITORING WELL
- MW-102D — DEEP OVERBURDEN AQUIFER MONITORING WELL
- MW-102R — BEDROCK AQUIFER MONITORING WELL
- LW-1B — DECOMMISSIONED MONITORING WELL
- JCPROD-1 — JONES CHEMICAL, INC. PRODUCTION WELL
- NEW HAMPSHIRE PLATING COMPANY SUPERFUND SITE BOUNDARY
- AREA OF CAPPED SOIL

NOTES:

1. THIS SITE SKETCH WAS DEVELOPED FROM AN AS-BUILT SURVEY BY RICHARD D. BARTLETT & ASSOCIATES PERFORMED ON DECEMBER 5 & 6, 2006.
2. LOCATIONS AND SITE FEATURES DEPICTED HEREON ARE APPROXIMATE AND GIVEN FOR ILLUSTRATIVE PURPOSES ONLY.
3. MONITORING WELLS MW-301 AND MW-302 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, INC. GZA HAS RELIED UPON THE DATA PROVIDED, AND HAS NOT CONDUCTED AN INDEPENDENT EVALUATION OF THE RELIABILITY OF THESE DATA.



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SCALE IN FEET

N

NO.	ISSUE/DESCRIPTION	BY	DATE

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

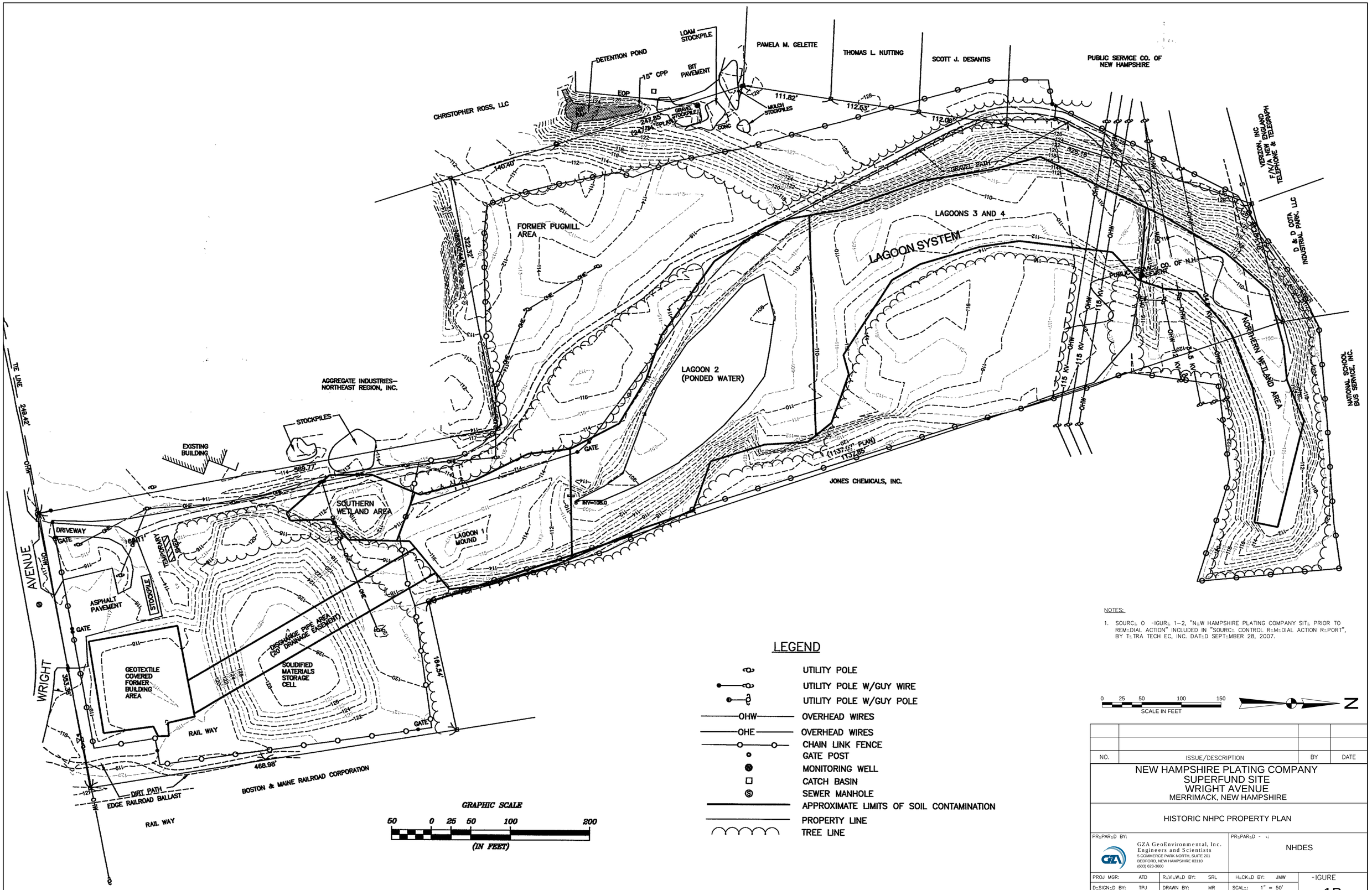
LOCUS AND SITE PLAN

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: ATD	REVIEWED BY: SRL	CHECKED BY: JMW	FIGURE
DESIGNED BY: TPJ	DRAWN BY: MR	SCALE: 1" = 120'	1A
DATE: DECEMBER 2014	PROJECT NO. 04.0029395.31	REVISION NO.	SHEET NO. 1 of 2

©2014– GZA GeoEnvironmental, Inc. GZA-P:\04Jobs\0029300s\04.0029395.00\04.0029395.31 NHPC FYR\Figures-CAD\Figure 1A – Locus and Site Plan.dwg [Figure 1] December 22, 2014 – 10:49am marvin.revere



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

NO.	ISSUE/DESCRIPTION	BY	DATE

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

HISTORIC NHPC PROPERTY PLAN

PREPARED BY:
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Engineers and Scientists
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BEDFORD, NEW HAMPSHIRE 03110
(603) 623-3600

PREPARED FOR: NHDES

PROJ MGR: ATD	REVIEWED BY: SRL	HECKED BY: JMW	FIGURE
DESIGNED BY: TPJ	DRAWN BY: MR	SCALE: 1" = 50'	1B
DATE: DECEMBER 2014	PROJECT NO. 04.0029395.31	REVISION NO.	SHEET NO. 2 of

©2014- GZA GeoEnvironmental, Inc. GZA-P:\04Jobs\0029300s\04.0029395.00\04.0029395.31 NHPC FYR\Figures-CAD\Figure 1B - HISTORIC NHPC PROPERTY PLAN.dwg [Figure 1] mber 16, 2014 - 3:45pm marvin.revere

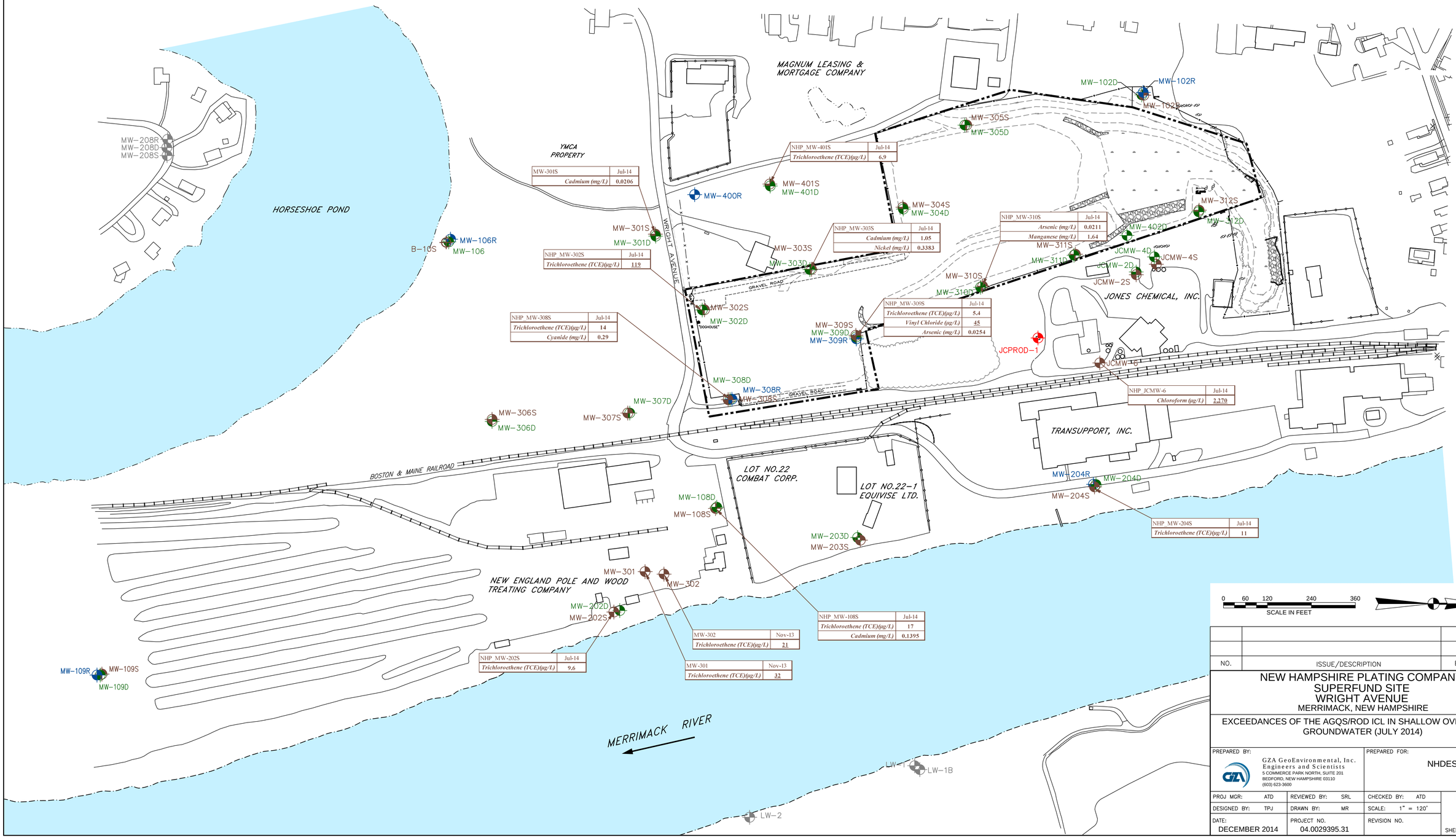
NOTES:

1. THIS SITE SKETCH WAS DEVELOPED FROM AN AS-BUILT SURVEY BY RICHARD D. BARTLETT & ASSOCIATES PERFORMED ON DECEMBER 5 & 6, 2006.
2. LOCATIONS AND SITE FEATURES DEPICTED HEREON ARE APPROXIMATE AND GIVEN FOR ILLUSTRATIVE PURPOSES ONLY.
3. AGQS INDICATES AMBIENT GROUNDWATER QUALITY STANDARDS INCLUDED IN ENV- OR 600 - CONTAMINATED SITE MANAGEMENT. GW-2 INDICATES GROUNDWATER TO INDOOR AIR SCREENING LEVELS INCLUDED IN TABLE 1, REV. FEBRUARY 2013, VAPOR INTRUSION SCREENING LEVELS OF THE VAPOR INTRUSION GUIDANCE. ROD ICL INDICATES INTERIM CONCENTRATION LIMITS ESTABLISHED IN THE RECORD OF DECISION (ROD) FOR SITE GROUNDWATER.
4. **BOLD** INDICATES THAT THE CONCENTRATION EXCEEDS THE AMBIENT GROUNDWATER QUALITY STANDARDS AND/OR RECORD OF DECISION INTERIM CLEANUP LEVELS. AN UNDERLINE INDICATES THAT THE CONCENTRATION EXCEEDS THE GW-2. REFER TO THE ACTION LIMITS ON THE TABLE PROVIDED IN THE FIGURE.
5. IF A DUPLICATE SAMPLE WAS TAKEN, THE HIGHER OF THE TWO VALUES WAS USED ON THIS FIGURE.
6. MONITORING WELLS MW-301 AND MW-302 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, INC. GZA HAS RELIED UPON THE DATA PROVIDED, AND HAS NOT CONDUCTED AN INDEPENDENT EVALUATION OF THE RELIABILITY OF THESE DATA.

LEGEND:

MW-102S	SHALLOW OVERBURDEN AQUIFER MONITORING WELL
MW-102D	DEEP OVERBURDEN AQUIFER MONITORING WELL
MW-102R	BEDROCK AQUIFER MONITORING WELL
LW-1B	DECOMMISSIONED MONITORING WELL
JCPROD-1	JONES CHEMICAL, INC. PRODUCTION WELL
	NEW HAMPSHIRE PLATING COMPANY SUPERFUND SITE BOUNDARY
µg/L	MICROGRAMS PER LITER
mg/L	MILLIGRAMS PER LITER

COMPOUND		AGQS	ROD ICL	GW-2
VOCs	*Chloroform (µg/L)*	70	100	70
	Trichloroethene (TCE) (µg/L)	5	5	20
	Vinyl Chloride (µg/L)	2	2	4
Metals	*Arsenic (mg/L)*	0.01	0.05	na
	Cadmium (mg/L)	0.005	0.005	na
	Manganese (mg/L)	0.84	na	na
	Nickel (mg/L)	0.10	0.10	na
	Cyanide (mg/L)	0.2	0.2	na



NO.	ISSUE/DESCRIPTION	BY	DATE

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

EXCEEDANCES OF THE AGQS/ROD ICL IN SHALLOW OVERBURDEN GROUNDWATER (JULY 2014)

PREPARED BY:
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PREPARED FOR: NHDES

PROJ MGR: ATD	REVIEWED BY: SRL	CHECKED BY: ATD	FIGURE 2A
DESIGNED BY: TPJ	DRAWN BY: MR	SCALE: 1" = 120'	
DATE: DECEMBER 2014	PROJECT NO. 04.0029395.31	REVISION NO.	SHEET NO. 2 OF 12

©2014- GZA GeoEnvironmental, Inc. GZA-P:\04Jobs\0029300s\04.0029395.00\04.0029395.31 NHPC FYR\Figures-CAD\Figure 2A - EXCEEDANCES OF THE AGQS-ROD IN SHALLOW OVERBURDEN GROUNDWATER.dwg [Figure - 6A] December 04, 2014 - 3:31pm marvin.revere

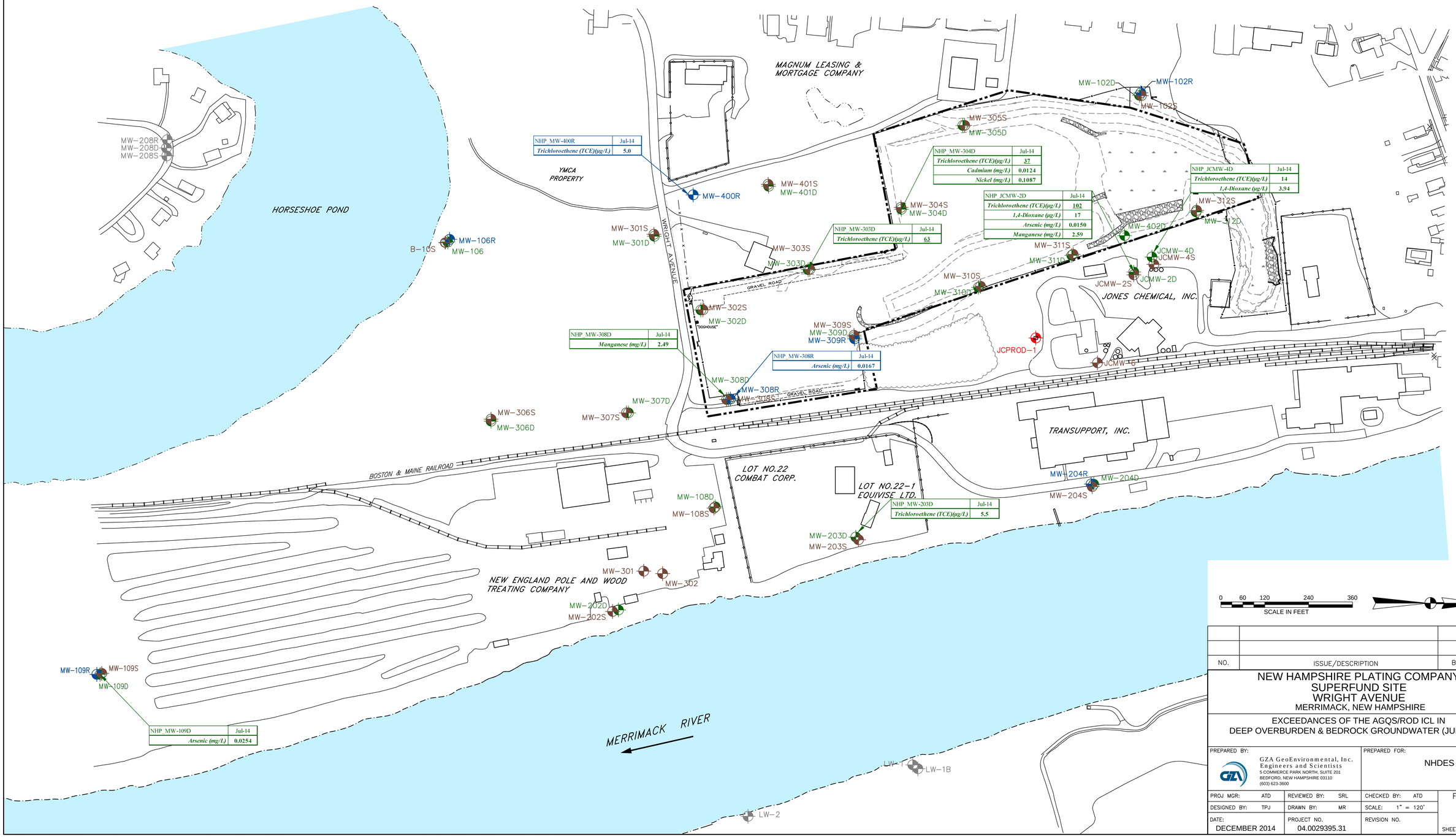
NOTES:

1. THIS SITE SKETCH WAS DEVELOPED FROM AN AS-BUILT SURVEY BY RICHARD D. BARTLETT & ASSOCIATES PERFORMED ON DECEMBER 5 & 6, 2006.
2. LOCATIONS AND SITE FEATURES DEPICTED HEREON ARE APPROXIMATE AND GIVEN FOR ILLUSTRATIVE PURPOSES ONLY.
3. AGQS INDICATES AMBIENT GROUNDWATER QUALITY STANDARDS INCLUDED IN ENV- OR 600 - CONTAMINATED SITE MANAGEMENT. GW-2 INDICATES GROUNDWATER TO INDOOR AIR SCREENING LEVELS INCLUDED IN TABLE 1, REV. FEBRUARY 2013, VAPOR INTRUSION SCREENING LEVELS OF THE VAPOR INTRUSION GUIDANCE. ROD ICL INDICATES INTERIM CONCENTRATION LIMITS ESTABLISHED IN THE RECORD OF DECISION (ROD) FOR SITE GROUNDWATER.
4. **BOLD** INDICATES THAT THE CONCENTRATION EXCEEDS THE AMBIENT GROUNDWATER QUALITY STANDARDS AND/OR RECORD OF DECISION INTERIM CLEANUP LEVELS. AN UNDERLINE INDICATES THAT THE CONCENTRATION EXCEEDS THE GW-2. REFER TO THE ACTION LIMITS ON THE TABLE PROVIDED IN THE FIGURE.
5. IF A DUPLICATE SAMPLE WAS TAKEN, THE HIGHER OF THE TWO VALUES WAS USED ON THIS FIGURE.

LEGEND:

MW-102S	SHALLOW OVERBURDEN AQUIFER MONITORING WELL
MW-102D	DEEP OVERBURDEN AQUIFER MONITORING WELL
MW-102R	BEDROCK AQUIFER MONITORING WELL
LW-1B	DECOMMISSIONED MONITORING WELL
JCPROD-1	JONES CHEMICAL, INC. PRODUCTION WELL
	NEW HAMPSHIRE PLATING COMPANY SUPERFUND SITE BOUNDARY
µg/L	MICROGRAMS PER LITER
mg/L	MILLIGRAMS PER LITER

	COMPOUND	AGQS	ROD ICL	GW-2
VOCs	*Trichloroethene (TCE)(µg/L)*	5	5	20
	1,4-Dioxane (µg/L)	3	na	na
Metals	*Arsenic (mg/L)*	0.01	0.05	na
	Cadmium (mg/L)	0.005	0.005	na
	Manganese (mg/L)	0.84	na	na
	Nickel (mg/L)	0.10	0.10	na



NO.	ISSUE/DESCRIPTION	BY	DATE

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

EXCEEDANCES OF THE AGQS/ROD ICL IN
DEEP OVERBURDEN & BEDROCK GROUNDWATER (JULY 2014)

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(603) 623-3600

PREPARED FOR: NHDES

PROJ MGR: ATD	REVIEWED BY: SRL	CHECKED BY: ATD	FIGURE 2B
DESIGNED BY: TPJ	DRAWN BY: MR	SCALE: 1" = 120'	
DATE: DECEMBER 2014	PROJECT NO. 04.0029395.31	REVISION NO.	SHEET NO. 3 OF 12

©2014- GZA GeoEnvironmental, Inc. GZA-P:\04Jobs\0029300s\04.0029395.00\04.0029395.31 NHPC FYR\Figures-CAD\Figure 2B - EXCEEDANCES OF THE AGQS-ROD IN DEEP OVERBURDEN GROUNDWATER.dwg [Figure - 2B] December 04, 2014 - 3:34pm marvin.revere

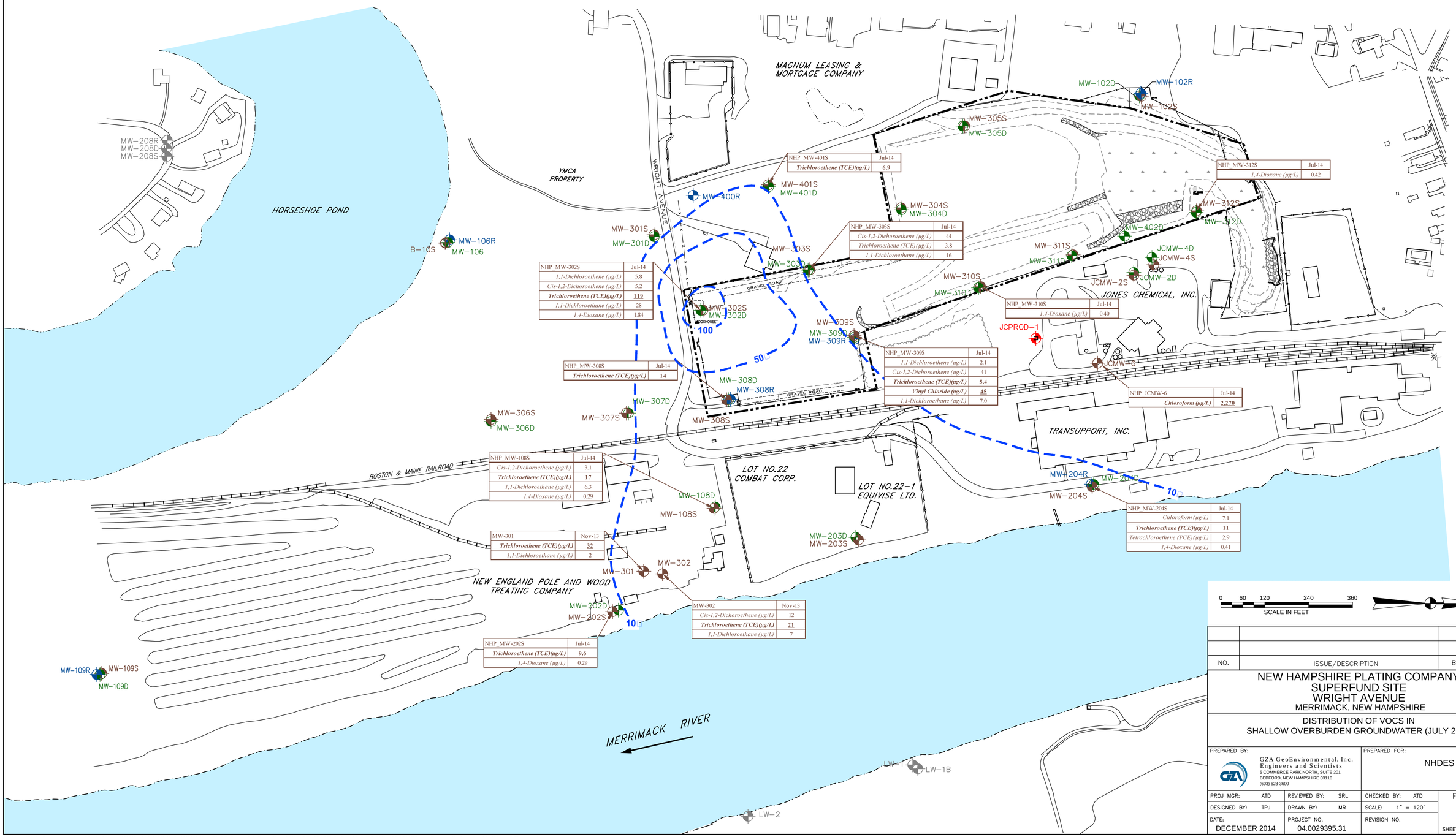
NOTES:

1. THIS SITE SKETCH WAS DEVELOPED FROM AN AS-BUILT SURVEY BY RICHARD D. BARTLETT & ASSOCIATES PERFORMED ON DECEMBER 5 & 6, 2006.
2. LOCATIONS AND SITE FEATURES DEPICTED HEREON ARE APPROXIMATE AND GIVEN FOR ILLUSTRATIVE PURPOSES ONLY.
3. AGQS INDICATES AMBIENT GROUNDWATER QUALITY STANDARDS INCLUDED IN ENV- OR 600 - CONTAMINATED SITE MANAGEMENT. GW-2 INDICATES GROUNDWATER TO INDOOR AIR SCREENING LEVELS INCLUDED IN TABLE 1, REV. FEBRUARY 2013, VAPOR INTRUSION SCREENING LEVELS OF THE VAPOR INTRUSION GUIDANCE. ROD ICL INDICATES INTERIM CONCENTRATION LIMITS ESTABLISHED IN THE RECORD OF DECISION (ROD) FOR SITE GROUNDWATER.
4. **BOLD** INDICATES THAT THE CONCENTRATION EXCEEDS THE AMBIENT GROUNDWATER QUALITY STANDARDS AND/OR RECORD OF DECISION INTERIM CLEANUP LEVELS. AN UNDERLINE INDICATES THAT THE CONCENTRATION EXCEEDS THE GW-2. REFER TO THE ACTION LIMITS ON THE TABLE PROVIDED IN THE FIGURE.
5. IF A DUPLICATE SAMPLE WAS TAKEN, THE HIGHER OF THE TWO VALUES WAS USED ON THIS FIGURE.
6. MONITORING WELLS MW-301 AND MW-302 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, INC. GZA HAS RELIED UPON THE DATA PROVIDED, AND HAS NOT CONDUCTED AN INDEPENDENT EVALUATION OF THE RELIABILITY OF THESE DATA.
7. WELL NHP_MW-203S IS NO LONGER SAMPLED DUE TO AN OBSTRUCTION; HOWEVER, DATA FROM AUGUST 2009 INDICATES TCE > THE ROD ICL/AGQS FOR TCE AT A CONCENTRATION OF 8.6 µg/L. THE TCE ISOPLETH IN THE VICINITY OF MW-203S CONSIDERS THIS HISTORICAL INFORMATION.

LEGEND:

MW-102S	SHALLOW OVERBURDEN AQUIFER MONITORING WELL
MW-102D	DEEP OVERBURDEN AQUIFER MONITORING WELL
MW-102R	BEDROCK AQUIFER MONITORING WELL
LW-1B	DECOMMISSIONED MONITORING WELL
JCPROD-1	JONES CHEMICAL, INC. PRODUCTION WELL
	NEW HAMPSHIRE PLATING COMPANY SUPERFUND SITE BOUNDARY
50	ESTIMATED TCE CONCENTRATION AND ISOPLETH
µg/L	MICROGRAMS PER LITER

COMPOUND		AGQS	ROD ICL	GW-2
VOCs of Concern	*Chloroform (µg/L)*	70	100	70
	1,1-Dichloroethene (µg/L)	7	7	630
	Cis-1,2-Dichoroethene (µg/L)	70	70	na
	Trichloroethene (TCE)(µg/L)	5	5	20
	Tetrachloroethene (PCE)(µg/L)	5	5	240
	Vinyl Chloride (µg/L)	2	2	4
Other	*1,1-Dichloroethane (µg/L)*	81	na	130
	1,4-Dioxane (µg/L)	3	na	na



NHP_MW-401S	Jul-14
Trichloroethene (TCE)(µg/L)	**6.9**

NHP_MW-312S	Jul-14
1,4-Dioxane (µg/L)	0.42

NHP_MW-303S	Jul-14
Cis-1,2-Dichoroethene (µg/L)	44
Trichloroethene (TCE)(µg/L)	3.8
1,1-Dichloroethane (µg/L)	16

NHP_MW-302S	Jul-14
1,1-Dichloroethene (µg/L)	5.8
Cis-1,2-Dichoroethene (µg/L)	5.2
Trichloroethene (TCE)(µg/L)	**119**
1,1-Dichloroethane (µg/L)	28
1,4-Dioxane (µg/L)	1.84

NHP_MW-310S	Jul-14
1,4-Dioxane (µg/L)	0.40

NHP_MW-309S	Jul-14
1,1-Dichloroethene (µg/L)	2.1
Cis-1,2-Dichoroethene (µg/L)	41
Trichloroethene (TCE)(µg/L)	**5.4**
Vinyl Chloride (µg/L)	**45**
1,1-Dichloroethane (µg/L)	7.0

NHP_MW-308S	Jul-14
Trichloroethene (TCE)(µg/L)	**14**

NHP_JCMW-6	Jul-14
Chloroform (µg/L)	**2,270**

NHP_MW-108S	Jul-14
Cis-1,2-Dichoroethene (µg/L)	3.1
Trichloroethene (TCE)(µg/L)	**17**
1,1-Dichloroethane (µg/L)	6.3
1,4-Dioxane (µg/L)	0.29

NHP_MW-204S	Jul-14
Chloroform (µg/L)	7.1
Trichloroethene (TCE)(µg/L)	**11**
Tetrachloroethene (PCE)(µg/L)	2.9
1,4-Dioxane (µg/L)	0.41

MW-301	Nov-13
Trichloroethene (TCE)(µg/L)	**32**
1,1-Dichloroethane (µg/L)	2

MW-302	Nov-13
Cis-1,2-Dichoroethene (µg/L)	12
Trichloroethene (TCE)(µg/L)	**21**
1,1-Dichloroethane (µg/L)	7

NHP_MW-202S	Jul-14
Trichloroethene (TCE)(µg/L)	**9.6**
1,4-Dioxane (µg/L)	0.29

0 60 120 240 360
SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

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

DISTRIBUTION OF VOCS IN
SHALLOW OVERBURDEN GROUNDWATER (JULY 2014)

PREPARED BY:
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BEDFORD, NEW HAMPSHIRE 03110
(603) 623-3600

PREPARED FOR: NHDES

PROJ MGR: ATD	REVIEWED BY: SRL	CHECKED BY: ATD	FIGURE 3A
DESIGNED BY: TPJ	DRAWN BY: MR	SCALE: 1" = 120'	
DATE: DECEMBER 2014	PROJECT NO. 04.0029395.31	REVISION NO.	SHEET NO. 4 OF 12

©2014- GZA GeoEnvironmental, Inc. GZA-P:\04Jobs\0029300s\04.0029395.00\04.0029395.31 NHPC FYR\Figures-CAD\Figure 3A - DISTRIBUTION OF VOCS IN SHALLOW OVERBURDEN GROUNDWATER.dwg [Figure - 3A] December 04, 2014 - 3:37pm marvin.revere

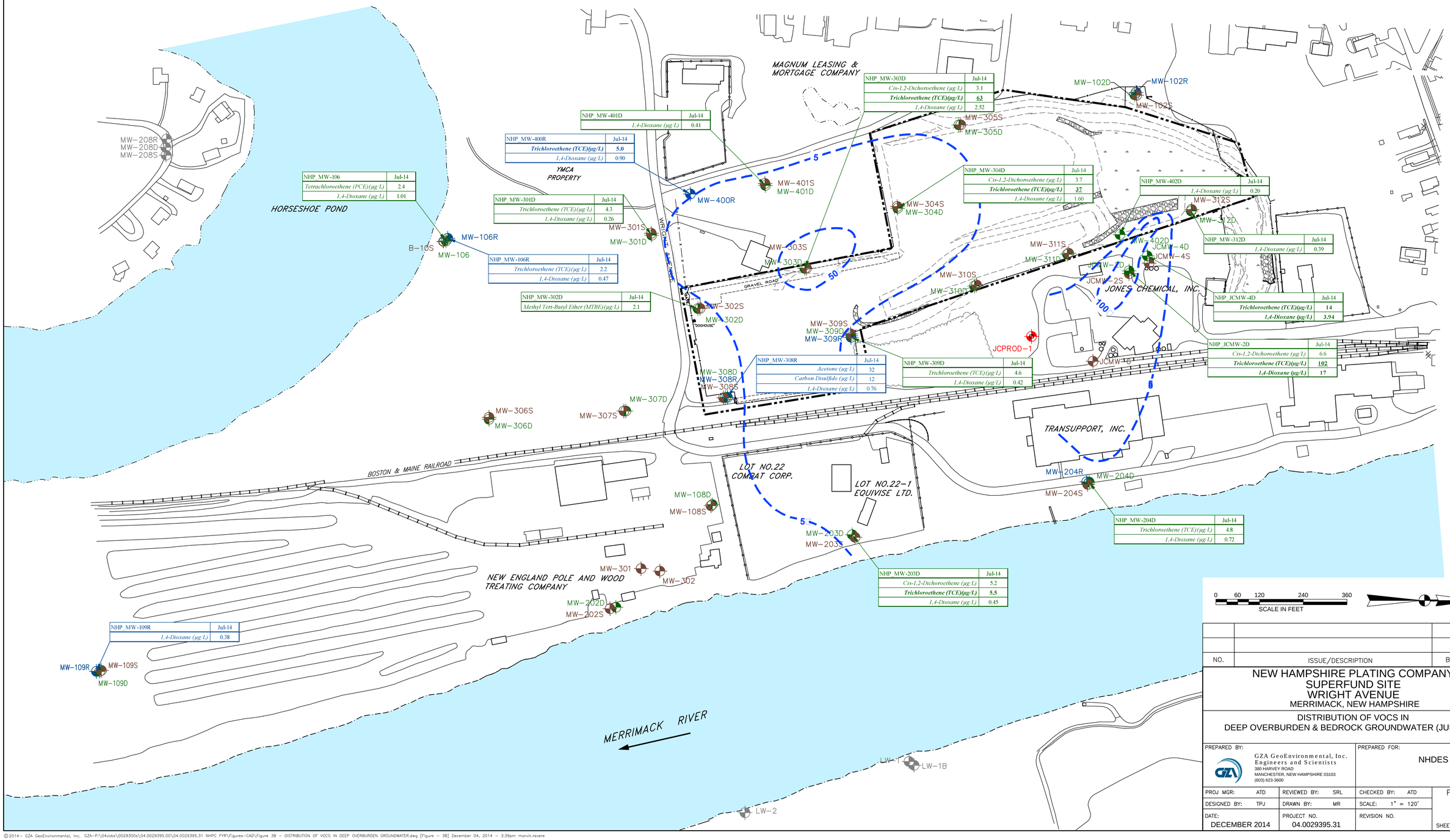
NOTES:

1. THIS SITE SKETCH WAS DEVELOPED FROM AN AS-BUILT SURVEY BY RICHARD D. BARTLETT & ASSOCIATES PERFORMED ON DECEMBER 5 & 6, 2006.
2. LOCATIONS AND SITE FEATURES DEPICTED HEREON ARE APPROXIMATE AND GIVEN FOR ILLUSTRATIVE PURPOSES ONLY.
3. AGQS INDICATES AMBIENT GROUNDWATER QUALITY STANDARDS INCLUDED IN ENV- OR 600 – CONTAMINATED SITE MANAGEMENT. GW-2 INDICATES GROUNDWATER TO INDOOR AIR SCREENING LEVELS INCLUDED IN TABLE 1, REV. FEBRUARY 2013, VAPOR INTRUSION SCREENING LEVELS OF THE VAPOR INTRUSION GUIDANCE. ROD ICL INDICATES INTERIM CONCENTRATION LIMITS ESTABLISHED IN THE RECORD OF DECISION (ROD) FOR SITE GROUNDWATER.
4. **BOLD** INDICATES THAT THE CONCENTRATION EXCEEDS THE AMBIENT GROUNDWATER QUALITY STANDARDS AND/OR RECORD OF DECISION INTERIM CLEANUP LEVELS. AN UNDERLINE INDICATES THAT THE CONCENTRATION EXCEEDS THE GW-2. REFER TO THE ACTION LIMITS ON THE TABLE PROVIDED IN THE FIGURE.
5. IF A DUPLICATE SAMPLE WAS TAKEN, THE HIGHER OF THE TWO VALUES WAS USED ON THIS FIGURE.

LEGEND:

MW-102S	SHALLOW OVERBURDEN AQUIFER MONITORING WELL
MW-102D	DEEP OVERBURDEN AQUIFER MONITORING WELL
MW-102R	BEDROCK AQUIFER MONITORING WELL
LW-1B	DECOMMISSIONED MONITORING WELL
JCPROD-1	JONES CHEMICAL, INC. PRODUCTION WELL
	NEW HAMPSHIRE PLATING COMPANY SUPERFUND SITE BOUNDARY
5	ESTIMATED TCE CONCENTRATION AND ISOPLETH
µg/L	MICROGRAMS PER LITER

COMPOUND		AGQS	ROD ICL	GW-2
VOCs of Concern	*Cis-1,2-Dichoroethene (µg/L)*	70	70	na
	Trichloroethene (TCE)(µg/L)	5	5	20
	Tetrachloroethene (PCE)(µg/L)	5	5	240
Other	*Acetone (µg/L)*	6,000	na	na
	Carbon Disulfide (µg/L)	70	na	na
	Methyl Tert-Butyl Ether (MTBE)(µg/L)	13	na	2,600
	1,4-Dioxane (µg/L)	3	na	na



NO.	ISSUE/DESCRIPTION	BY	DATE

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

DISTRIBUTION OF VOCS IN DEEP OVERBURDEN & BEDROCK GROUNDWATER (JULY 2014)

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
380 HARVEY ROAD
MANCHESTER, NEW HAMPSHIRE 03103
(603) 623-3600

PREPARED FOR: NHDES

PROJ MGR: ATD	REVIEWED BY: SRL	CHECKED BY: ATD	FIGURE 3B
DESIGNED BY: TPJ	DRAWN BY: MR	SCALE: 1" = 120'	
DATE: DECEMBER 2014	PROJECT NO. 04.0029395.31	REVISION NO.	SHEET NO. 5 OF 12

©2014– GZA GeoEnvironmental, Inc. GZA-P:\04Jobs\0029300s\04.0029395.00\04.0029395.31 NHPC FYR\Figures-CAD\Figure 3B – DISTRIBUTION OF VOCS IN DEEP OVERBURDEN GROUNDWATER.dwg [Figure – 3B] December 04, 2014 – 3:39pm marvin.revere

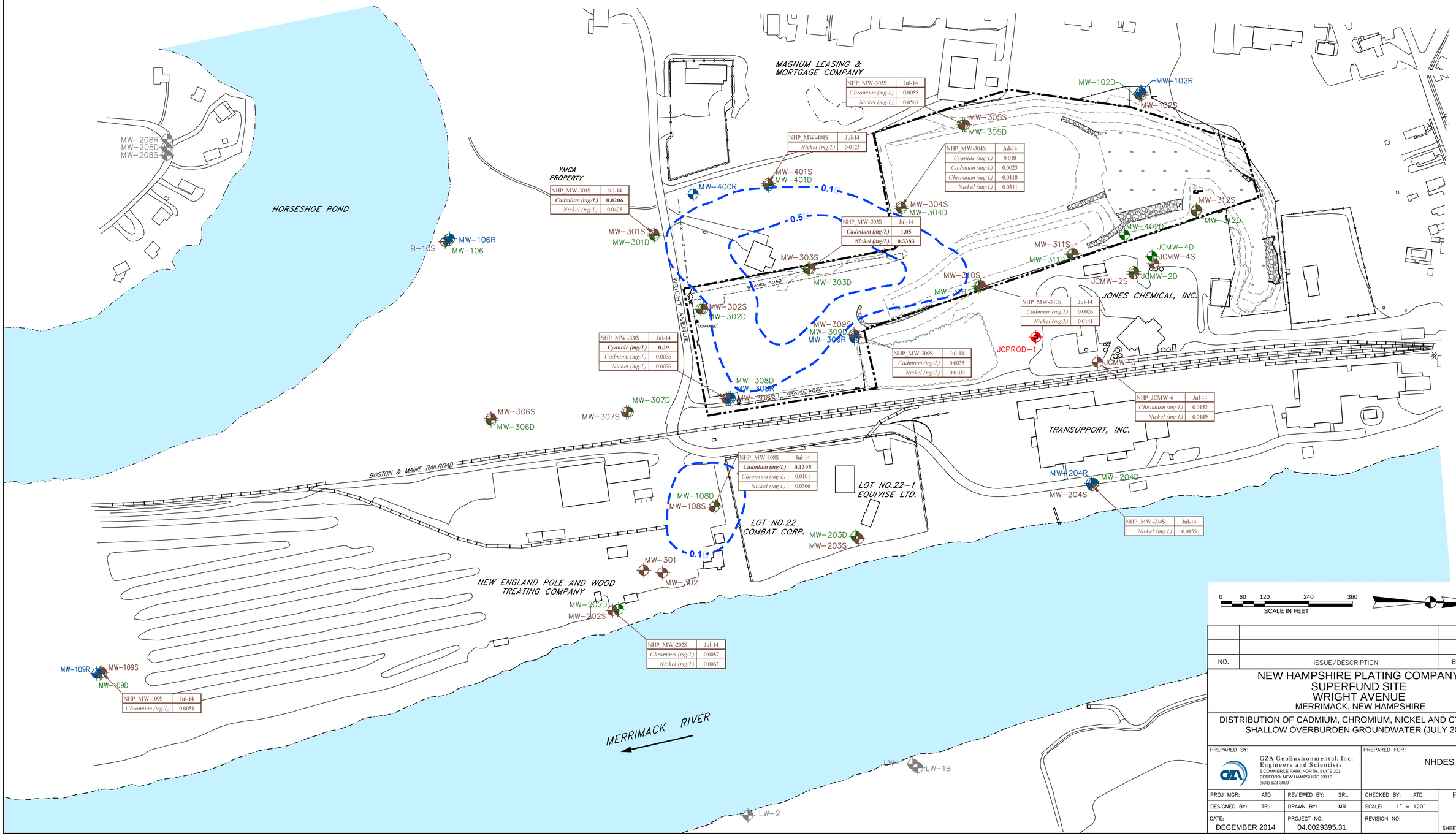
NOTES:

1. THIS SITE SKETCH WAS DEVELOPED FROM AN AS-BUILT SURVEY BY RICHARD D. BARTLETT & ASSOCIATES PERFORMED ON DECEMBER 5 & 6, 2006.
2. LOCATIONS AND SITE FEATURES DEPICTED HEREON ARE APPROXIMATE AND GIVEN FOR ILLUSTRATIVE PURPOSES ONLY.
3. AGQS INDICATES AMBIENT GROUNDWATER QUALITY STANDARDS INCLUDED IN ENV- OR 600- CONTAMINATED SITE MANAGEMENT. ROD ICL INDICATES INTERIM CONCENTRATION LIMITS ESTABLISHED IN THE RECORD OF DECISION (ROD) FOR SITE GROUNDWATER.
4. **BOLD** INDICATES THAT THE CONCENTRATION EXCEEDS THE AMBIENT GROUNDWATER QUALITY STANDARDS AND/OR RECORD OF DECISION INTERIM CLEANUP LEVELS. REFER TO THE ACTION LIMITS ON THE TABLE PROVIDED IN THE FIGURE.
5. IF A DUPLICATE SAMPLE WAS TAKEN, THE HIGHER OF THE TWO VALUES WAS USED ON THIS FIGURE.

LEGEND:

MW-102S	SHALLOW OVERBURDEN AQUIFER MONITORING WELL
MW-102D	DEEP OVERBURDEN AQUIFER MONITORING WELL
MW-102R	BEDROCK AQUIFER MONITORING WELL
LW-1B	DECOMMISSIONED MONITORING WELL
JCPROD-1	JONES CHEMICAL, INC. PRODUCTION WELL
	NEW HAMPSHIRE PLATING COMPANY SUPERFUND SITE BOUNDARY
0.005	ESTIMATED CADMIUM CONCENTRATION AND ISOPLETH
mg/L	MILLIGRAMS PER LITER

COMPOUND	AGQS	ROD ICL
Cyanide (mg/L)	0.2	0.2
Cadmium (mg/L)	0.005	0.005
Chromium (mg/L)	0.1	0.10
Lead (mg/L)	0.015	0.02
Nickel (mg/L)	0.10	0.10



NO.	ISSUE/DESCRIPTION	BY	DATE

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

DISTRIBUTION OF CADMIUM, CHROMIUM, NICKEL AND CYANIDE IN SHALLOW OVERBURDEN GROUNDWATER (JULY 2014)

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: ATD	REVIEWED BY: SRL	CHECKED BY: ATD	FIGURE 4A
DESIGNED BY: TRJ	DRAWN BY: MR	SCALE: 1" = 120'	
DATE: DECEMBER 2014	PROJECT NO. 04.0029395.31	REVISION NO.	SHEET NO. 6 OF 12

©2014- GZA GeoEnvironmental, Inc. GZA-P:\04Jobs\0029300s\04.0029395.00\04.0029395.31 NHPC FYR\Figures-CAD\Figure 4A - DISTRIBUTION OF METALS AND CYANIDE IN SHALLOW OVERBURDEN GROUNDWATER.dwg [Figure - 4A] December 04, 2014 - 3:46pm marvin.revere

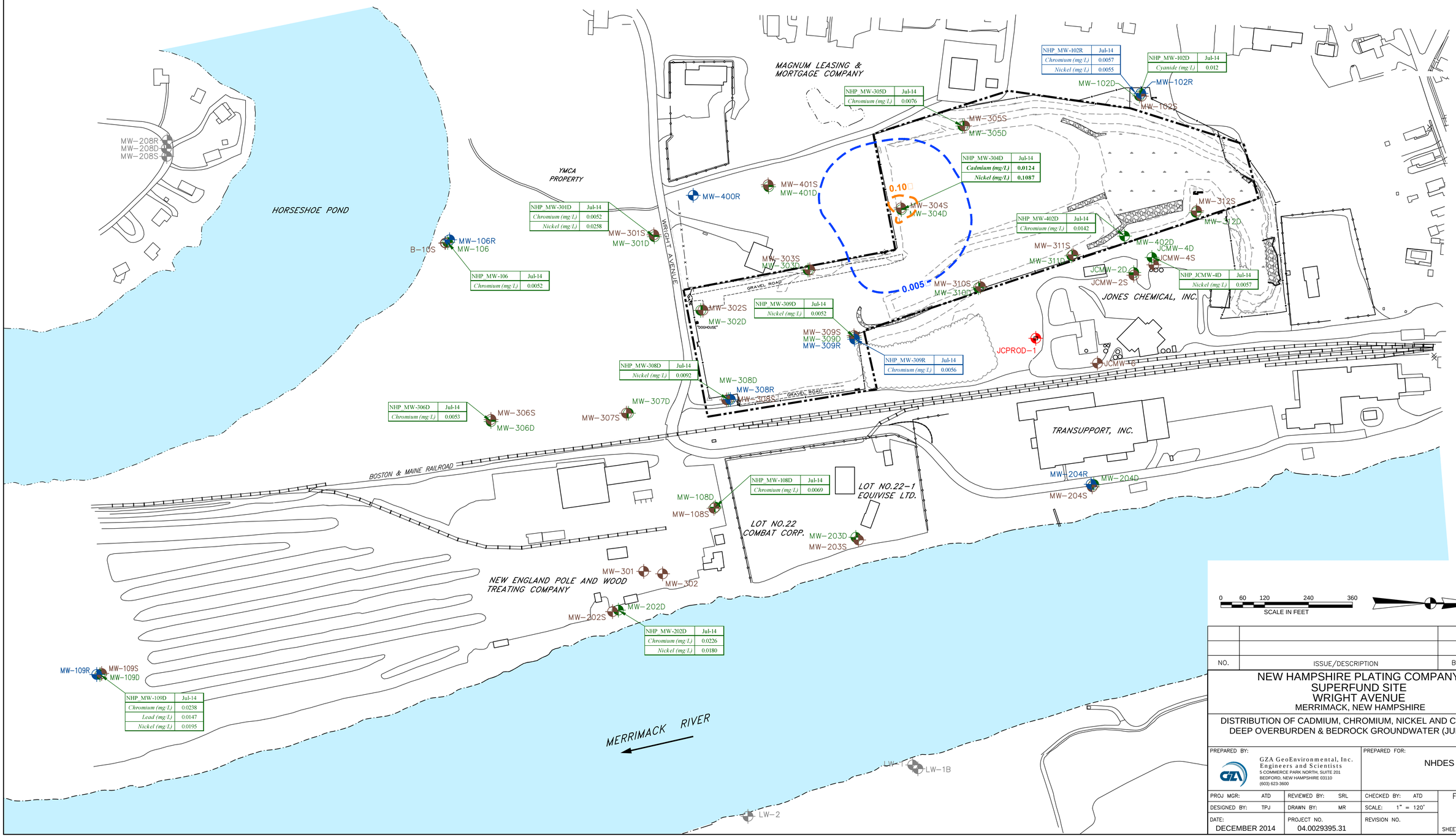
NOTES:

1. THIS SITE SKETCH WAS DEVELOPED FROM AN AS-BUILT SURVEY BY RICHARD D. BARTLETT & ASSOCIATES PERFORMED ON DECEMBER 5 & 6, 2006.
2. LOCATIONS AND SITE FEATURES DEPICTED HEREON ARE APPROXIMATE AND GIVEN FOR ILLUSTRATIVE PURPOSES ONLY.
3. AGQS INDICATES AMBIENT GROUNDWATER QUALITY STANDARDS INCLUDED IN ENV- OR 600- CONTAMINATED SITE MANAGEMENT. ROD ICL INDICATES INTERIM CONCENTRATION LIMITS ESTABLISHED IN THE RECORD OF DECISION (ROD) FOR SITE GROUNDWATER.
4. **BOLD** INDICATES THAT THE CONCENTRATION EXCEEDS THE AMBIENT GROUNDWATER QUALITY STANDARDS AND/OR RECORD OF DECISION INTERIM CLEANUP LEVELS. REFER TO THE ACTION LIMITS ON THE TABLE PROVIDED IN THE FIGURE.
5. IF A DUPLICATE SAMPLE WAS TAKEN, THE HIGHER OF THE TWO VALUES WAS USED ON THIS FIGURE.

LEGEND:

MW-102S	SHALLOW OVERBURDEN AQUIFER MONITORING WELL
MW-102D	DEEP OVERBURDEN AQUIFER MONITORING WELL
MW-102R	BEDROCK AQUIFER MONITORING WELL
LW-1B	DECOMMISSIONED MONITORING WELL
JCPROD-1	JONES CHEMICAL, INC. PRODUCTION WELL
	NEW HAMPSHIRE PLATING COMPANY SUPERFUND SITE BOUNDARY
0.005	ESTIMATED CADMIUM CONCENTRATION AND ISOPLETH
0.10	ESTIMATED NICKEL CONCENTRATION AND ISOPLETH
mg/L	MILLIGRAMS PER LITER

COMPOUND	AGQS	ROD ICL
Cyanide (mg/L)	0.2	0.2
Cadmium (mg/L)	0.005	0.005
Chromium (mg/L)	0.1	0.10
Lead (mg/L)	0.015	0.02
Nickel (mg/L)	0.10	0.10



NO.	ISSUE/DESCRIPTION	BY	DATE

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

DISTRIBUTION OF CADMIUM, CHROMIUM, NICKEL AND CYANIDE IN DEEP OVERBURDEN & BEDROCK GROUNDWATER (JULY 2014)

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: ATD	REVIEWED BY: SRL	CHECKED BY: ATD	FIGURE 4B
DESIGNED BY: TPJ	DRAWN BY: MR	SCALE: 1" = 120'	
DATE: DECEMBER 2014	PROJECT NO. 04.0029395.31	REVISION NO.	SHEET NO. 7 OF 12

©2014- GZA GeoEnvironmental, Inc. GZA-P:\04Jobs\0029300s\04.0029395.00\04.0029395.31 NHPC FYR\Figures-CAD\Figure 4B - DISTRIBUTION OF METALS AND CYANIDE IN DEEP OVERBURDEN GROUNDWATER.dwg [Figure - 4B] December 04, 2014 - 3:49pm marvin.revere

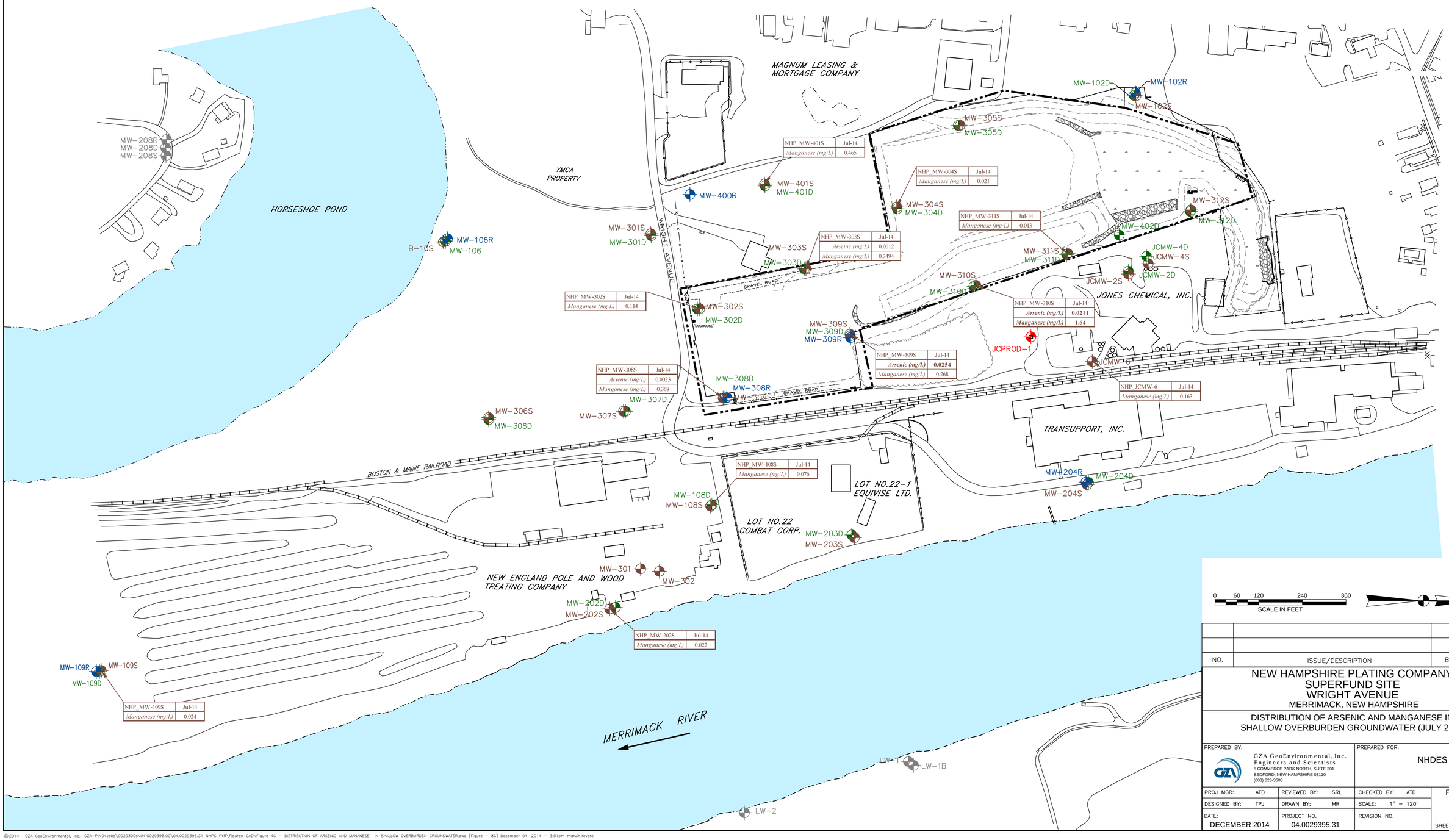
NOTES:

1. THIS SITE SKETCH WAS DEVELOPED FROM AN AS-BUILT SURVEY BY RICHARD D. BARTLETT & ASSOCIATES PERFORMED ON DECEMBER 5 & 6, 2006.
2. LOCATIONS AND SITE FEATURES DEPICTED HEREON ARE APPROXIMATE AND GIVEN FOR ILLUSTRATIVE PURPOSES ONLY.
3. AGQS INDICATES AMBIENT GROUNDWATER QUALITY STANDARDS INCLUDED IN ENV- OR 600- CONTAMINATED SITE MANAGEMENT. ROD ICL INDICATES INTERIM CONCENTRATION LIMITS ESTABLISHED IN THE RECORD OF DECISION (ROD) FOR SITE GROUNDWATER.
4. **BOLD** INDICATES THAT THE CONCENTRATION EXCEEDS THE AMBIENT GROUNDWATER QUALITY STANDARDS AND/OR RECORD OF DECISION INTERIM CLEANUP LEVELS. REFER TO THE ACTION LIMITS ON THE TABLE PROVIDED IN THE FIGURE.
5. IF A DUPLICATE SAMPLE WAS TAKEN, THE HIGHER OF THE TWO VALUES WAS USED ON THIS FIGURE.

LEGEND:

MW-102S	SHALLOW OVERBURDEN AQUIFER MONITORING WELL
MW-102D	DEEP OVERBURDEN AQUIFER MONITORING WELL
MW-102R	BEDROCK AQUIFER MONITORING WELL
LW-1B	DECOMMISSIONED MONITORING WELL
JCPROD-1	JONES CHEMICAL, INC. PRODUCTION WELL
	NEW HAMPSHIRE PLATING COMPANY SUPERFUND SITE BOUNDARY
mg/L	MILLIGRAMS PER LITER

COMPOUND	AGQS	ROD ICL
Arsenic (mg/L)	0.01	0.05
Manganese (mg/L)	0.84	na



NO.	ISSUE/DESCRIPTION	BY	DATE

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

DISTRIBUTION OF ARSENIC AND MANGANESE IN SHALLOW OVERBURDEN GROUNDWATER (JULY 2014)

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: ATD	REVIEWED BY: SRL	CHECKED BY: ATD	FIGURE 4C
DESIGNED BY: TPJ	DRAWN BY: MR	SCALE: 1" = 120'	
DATE: DECEMBER 2014	PROJECT NO. 04.0029395.31	REVISION NO.	SHEET NO. 8 OF 12

©2014- GZA GeoEnvironmental, Inc. GZA-P:\04Jobs\0029300s\04.0029395.00\04.0029395.31 NHPC FYR\Figures-CAD\Figure 4C - DISTRIBUTION OF ARSENIC AND MANANESE IN SHALLOW OVERBURDEN GROUNDWATER.dwg [Figure - 8C] December 04, 2014 - 3:51pm marvin.revere

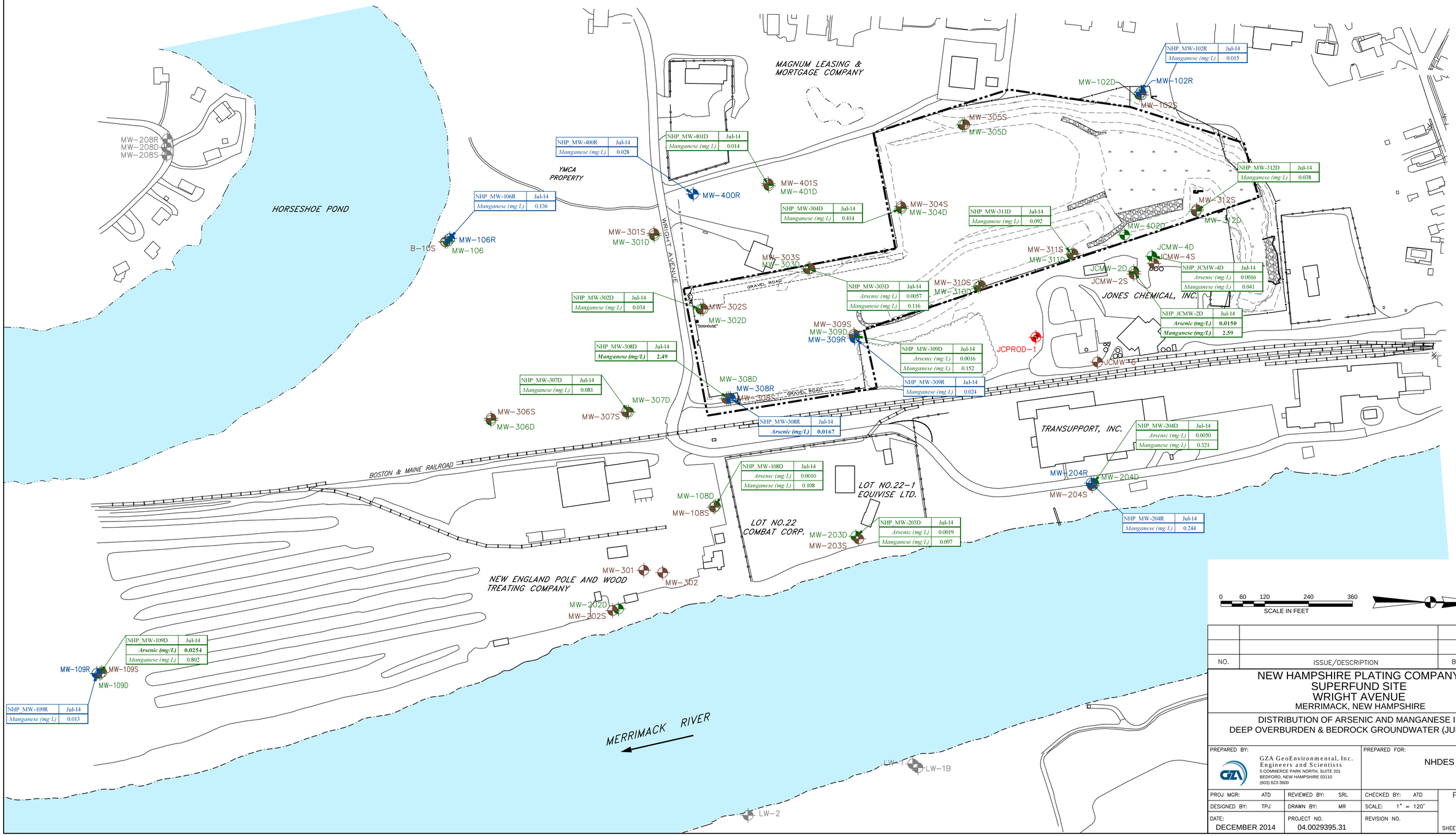
NOTES:

1. THIS SITE SKETCH WAS DEVELOPED FROM AN AS-BUILT SURVEY BY RICHARD D. BARTLETT & ASSOCIATES PERFORMED ON DECEMBER 5 & 6, 2006.
2. LOCATIONS AND SITE FEATURES DEPICTED HEREON ARE APPROXIMATE AND GIVEN FOR ILLUSTRATIVE PURPOSES ONLY.
3. AGQS INDICATES AMBIENT GROUNDWATER QUALITY STANDARDS INCLUDED IN ENV- OR 600- CONTAMINATED SITE MANAGEMENT. ROD ICL INDICATES INTERIM CONCENTRATION LIMITS ESTABLISHED IN THE RECORD OF DECISION (ROD) FOR SITE GROUNDWATER.
4. **BOLD** INDICATES THAT THE CONCENTRATION EXCEEDS THE AMBIENT GROUNDWATER QUALITY STANDARDS AND/OR RECORD OF DECISION INTERIM CLEANUP LEVELS. REFER TO THE ACTION LIMITS ON THE TABLE PROVIDED IN THE FIGURE.
5. IF A DUPLICATE SAMPLE WAS TAKEN, THE HIGHER OF THE TWO VALUES WAS USED ON THIS FIGURE.

LEGEND:

MW-102S	SHALLOW OVERBURDEN AQUIFER MONITORING WELL
MW-102D	DEEP OVERBURDEN AQUIFER MONITORING WELL
MW-102R	BEDROCK AQUIFER MONITORING WELL
LW-1B	DECOMMISSIONED MONITORING WELL
JCPROD-1	JONES CHEMICAL, INC. PRODUCTION WELL
	NEW HAMPSHIRE PLATING COMPANY SUPERFUND SITE BOUNDARY
mg/L	MILLIGRAMS PER LITER

COMPOUND	AGQS	ROD ICL
Arsenic (mg/L)	0.01	0.05
Manganese (mg/L)	0.84	na



NO.	ISSUE/DESCRIPTION	BY	DATE

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

DISTRIBUTION OF ARSENIC AND MANGANESE IN DEEP OVERBURDEN & BEDROCK GROUNDWATER (JULY 2014)

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
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BEDFORD, NEW HAMPSHIRE 03110
(603) 623-3600

PREPARED FOR: NHDES

PROJ MGR: ATD	REVIEWED BY: SRL	CHECKED BY: ATD	FIGURE 4D
DESIGNED BY: TPJ	DRAWN BY: MR	SCALE: 1" = 120'	
DATE: DECEMBER 2014	PROJECT NO. 04.0029395.31	REVISION NO.	SHEET NO. 9 OF 12

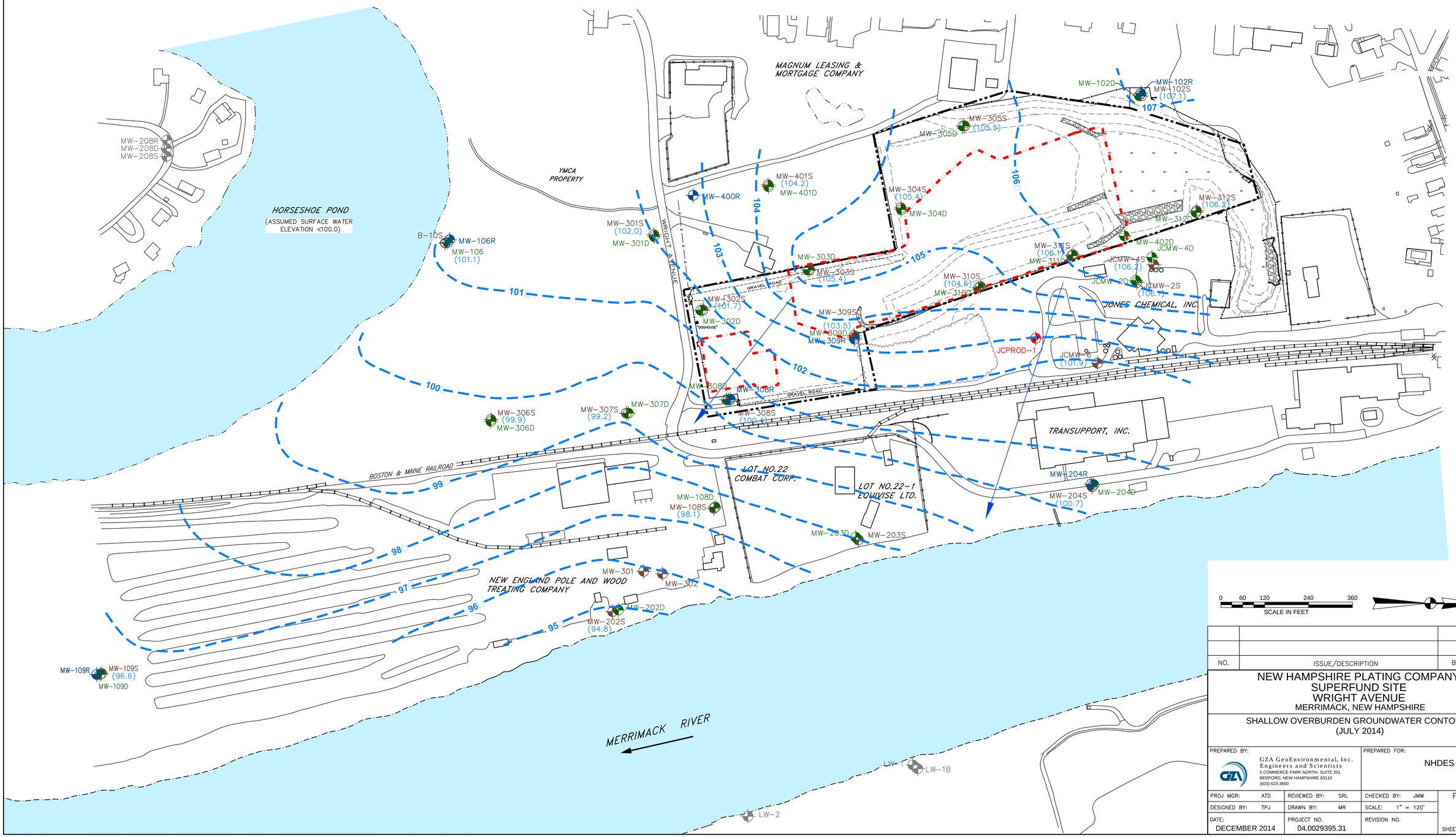
©2014– GZA GeoEnvironmental, Inc. GZA-P:\04Jobs\0029300s\04.0029395.00\04.0029395.31 NHPC FYR\Figures-CAD\Figure 4D – DISTRIBUTION OF ARSENIC AND MANGANESE IN DEEP OVERBURDEN GROUNDWATER.dwg [Figure – 4D] December 04, 2014 – 3:53pm marvin.revere

LEGEND:

MW-102S	SHALLOW OVERBURDEN AQUIFER MONITORING WELL
MW-102D	DEEP OVERBURDEN AQUIFER MONITORING WELL
MW-102R	BEDROCK AQUIFER MONITORING WELL
LW-1B	DECOMMISSIONED MONITORING WELL
JCPROD-1	JONES CHEMICAL, INC. PRODUCTION WELL
	NEW HAMPSHIRE PLATING COMPANY SUPERFUND SITE BOUNDARY
104	ESTIMATED GROUNDWATER CONTOURS
(104.2)	GROUNDWATER ELEVATIONS
	ESTIMATED GROUNDWATER FLOW DIRECTIONS

NOTES:

1. THIS SITE SKETCH WAS DEVELOPED FROM AN AS-BUILT SURVEY BY RICHARD D. BARTLETT & ASSOCIATES PERFORMED ON DECEMBER 5 & 6, 2006.
2. LOCATIONS AND SITE FEATURES DEPICTED HEREON ARE APPROXIMATE AND GIVEN FOR ILLUSTRATIVE PURPOSES ONLY.
3. MONITORING WELLS MW-301 AND MW-302 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, INC. GZA HAS RELIED UPON THE DATA PROVIDED, AND HAS NOT CONDUCTED AN INDEPENDENT EVALUATION OF THE RELIABILITY OF THESE DATA.
4. GROUNDWATER ELEVATIONS WERE CALCULATED FROM THE JULY 14, 2014 COMPREHENSIVE WATER LEVEL ROUND.



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

SHALLOW OVERBURDEN GROUNDWATER CONTOURS
(JULY 2014)

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: ATD	REVIEWED BY: SRL	CHECKED BY: JMW	FIGURE
DESIGNED BY: TPJ	DRAWN BY: MR	SCALE: 1" = 120'	5
DATE: DECEMBER 2014	PROJECT NO. 04.0029395.31	REVISION NO.	SHEET NO. 10 OF 12

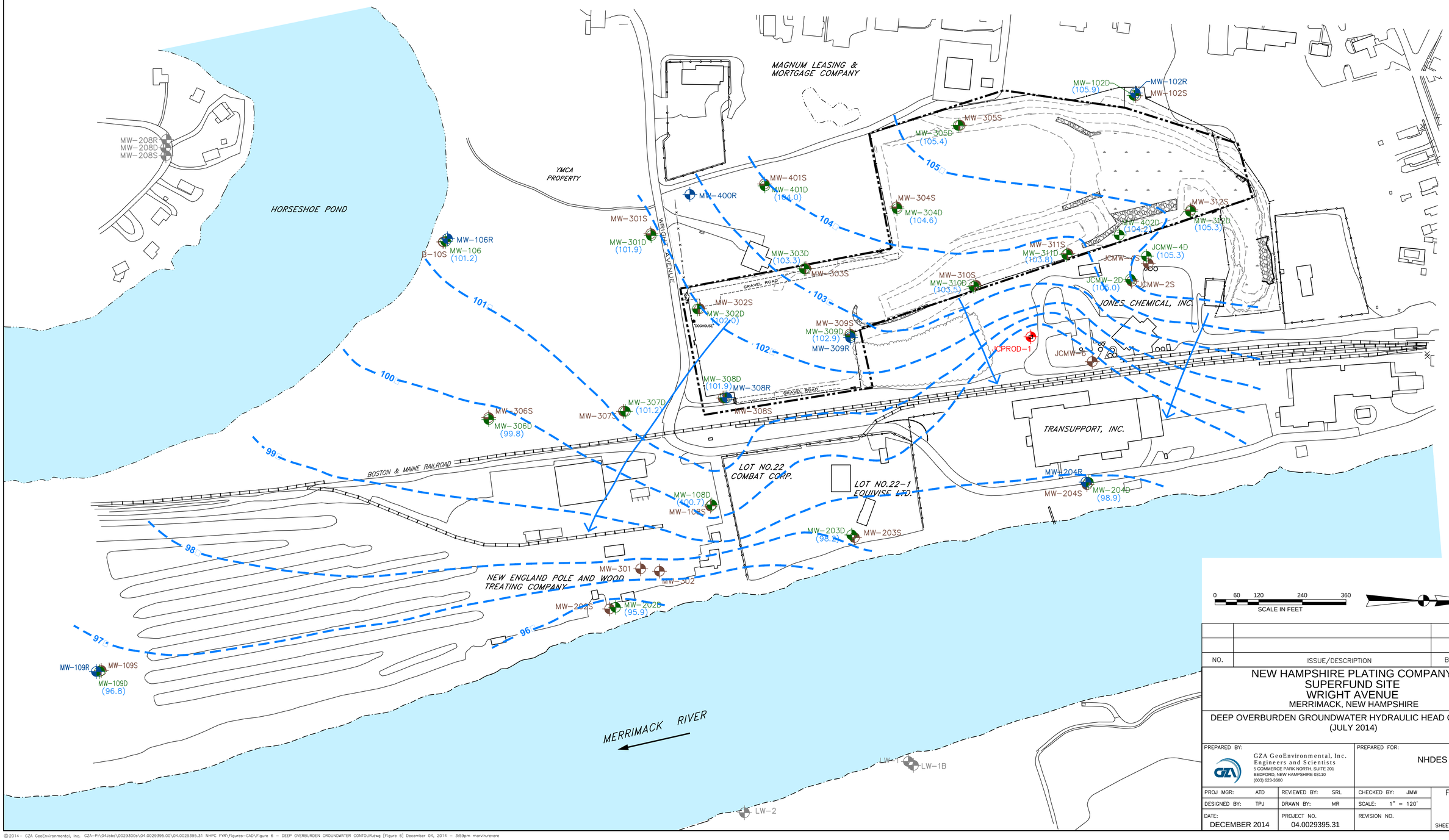
©2014– GZA GeoEnvironmental, Inc. GZA-P:\04Jobs\0029300s\04.0029395.00\04.0029395.31 NHPC FYR\Figures-CAD\Figure 5 – SHALLOW OVERBURDEN GROUNDWATER CONTOURS.dwg [Figure 5] December 04, 2014 – 3:55pm marvin.revere

LEGEND:

MW-102S	SHALLOW OVERBURDEN AQUIFER MONITORING WELL
MW-102D	DEEP OVERBURDEN AQUIFER MONITORING WELL
MW-102R	BEDROCK AQUIFER MONITORING WELL
LW-1B	DECOMMISSIONED MONITORING WELL
JCPROD-1	JONES CHEMICAL, INC. PRODUCTION WELL
	NEW HAMPSHIRE PLATING COMPANY SUPERFUND SITE BOUNDARY
104	ESTIMATED GROUNDWATER CONTOURS
104.2	GROUNDWATER ELEVATIONS
	ESTIMATED GROUNDWATER FLOW DIRECTIONS

NOTES:

1. THIS SITE SKETCH WAS DEVELOPED FROM AN AS-BUILT SURVEY BY RICHARD D. BARTLETT & ASSOCIATES PERFORMED ON DECEMBER 5 & 6, 2006.
2. LOCATIONS AND SITE FEATURES DEPICTED HEREON ARE APPROXIMATE AND GIVEN FOR ILLUSTRATIVE PURPOSES ONLY.
3. MONITORING WELLS MW-301 AND MW-302 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, INC. GZA HAS RELIED UPON THE DATA PROVIDED, AND HAS NOT CONDUCTED AN INDEPENDENT EVALUATION OF THE RELIABILITY OF THESE DATA.
4. GROUNDWATER ELEVATIONS WERE CALCULATED FROM THE JULY 14, 2014 COMPREHENSIVE WATER LEVEL ROUND.



NO.	ISSUE/DESCRIPTION	BY	DATE

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

DEEP OVERBURDEN GROUNDWATER HYDRAULIC HEAD CONTOURS (JULY 2014)

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: ATD	REVIEWED BY: SRL	CHECKED BY: JMW	FIGURE 6
DESIGNED BY: TPJ	DRAWN BY: MR	SCALE: 1" = 120'	
DATE: DECEMBER 2014	PROJECT NO. 04.0029395.31	REVISION NO.	SHEET NO. 11 OF 12

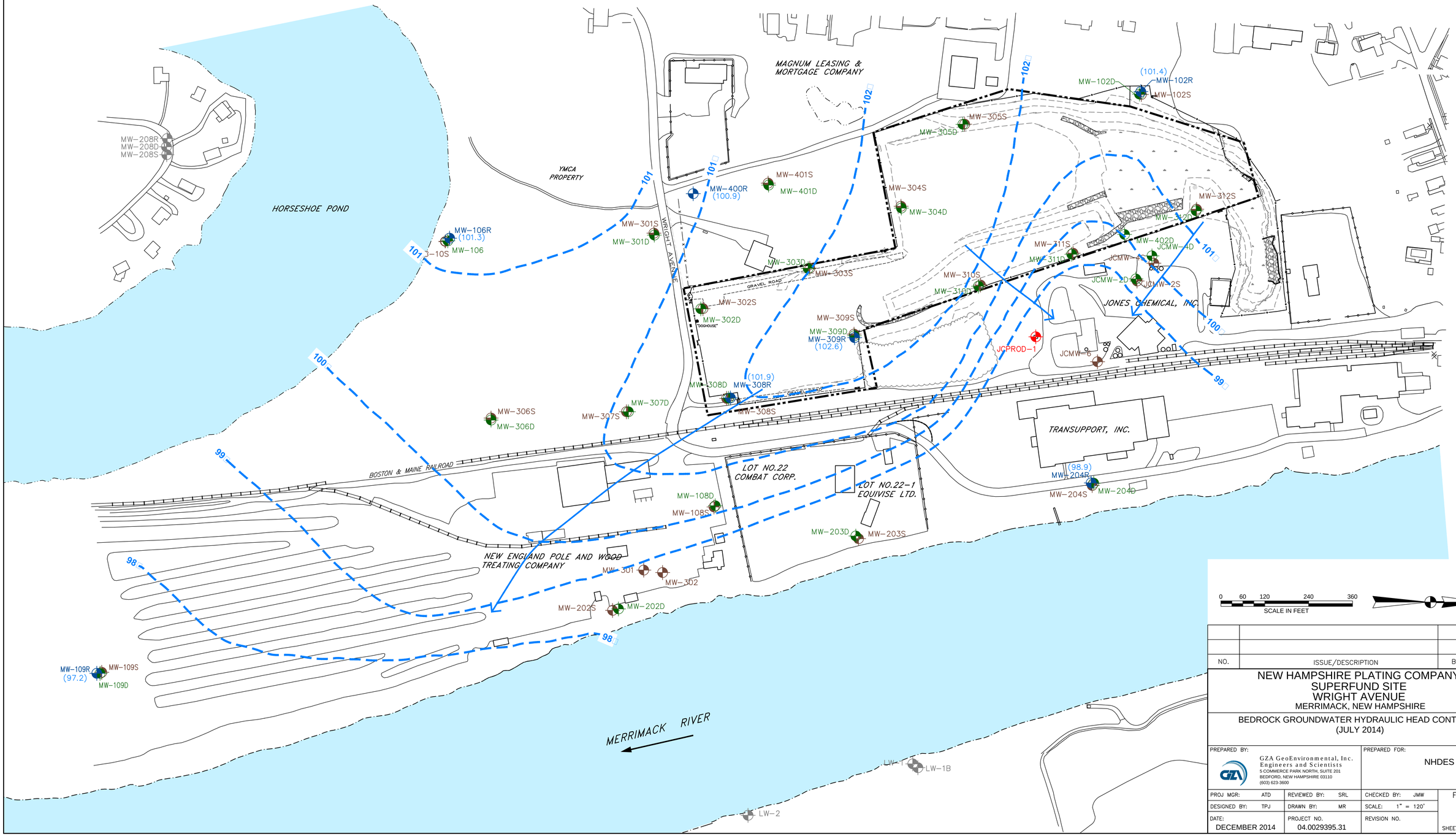
© 2014– GZA GeoEnvironmental, Inc. GZA-P:\04Jobs\0029300s\04.0029395.00\04.0029395.31 NHPC FYR\Figures-CAD\Figure 6 – DEEP OVERBURDEN GROUNDWATER CONTOUR.dwg [Figure 6] December 04, 2014 – 3:59pm marvin.revere

LEGEND:

MW–102S	SHALLOW OVERBURDEN AQUIFER MONITORING WELL
MW–102D	DEEP OVERBURDEN AQUIFER MONITORING WELL
MW–102R	BEDROCK AQUIFER MONITORING WELL
LW–1B	DECOMMISSIONED MONITORING WELL
JCPROD–1	JONES CHEMICAL, INC. PRODUCTION WELL
	NEW HAMPSHIRE PLATING COMPANY SUPERFUND SITE BOUNDARY
104	ESTIMATED GROUNDWATER CONTOURS
104.2	HYDRAULIC HEAD
	ESTIMATED GROUNDWATER FLOW DIRECTIONS

NOTES:

1. THIS SITE SKETCH WAS DEVELOPED FROM AN AS–BUILT SURVEY BY RICHARD D. BARTLETT & ASSOCIATES PERFORMED ON DECEMBER 5 & 6, 2006.
2. LOCATIONS AND SITE FEATURES DEPICTED HEREON ARE APPROXIMATE AND GIVEN FOR ILLUSTRATIVE PURPOSES ONLY.
3. MONITORING WELLS MW–301 AND MW–302 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, INC. GZA HAS RELIED UPON THE DATA PROVIDED, AND HAS NOT CONDUCTED AN INDEPENDENT EVALUATION OF THE RELIABILITY OF THESE DATA.
4. GROUNDWATER ELEVATIONS WERE CALCULATED FROM THE JULY 14, 2014 COMPREHENSIVE WATER LEVEL ROUND.



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NO.	ISSUE/DESCRIPTION	BY	DATE

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

BEDROCK GROUNDWATER HYDRAULIC HEAD CONTOURS (JULY 2014)

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: ATD	REVIEWED BY: SRL	CHECKED BY: JMW	FIGURE 7
DESIGNED BY: TPJ	DRAWN BY: MR	SCALE: 1" = 120'	
DATE: DECEMBER 2014	PROJECT NO. 04.0029395.31	REVISION NO.	SHEET NO. 12 OF 12

©2014– GZA GeoEnvironmental, Inc. GZA–P:\04Jobs\0029300s\04.0029395.00\04.0029395.31 NHPC FYR\Figures–CAD\Figure 7 – BEDROCK GROUNDWATER HYDRAULIC HEAD.dwg [Figure 7] December 04, 2014 – 4:01pm marvin.revere

APPENDIX C

TABLES

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date	NH AGQS	ROD ICL	GW-2	NHP_JCPROD-1 Bedrock							NHP_JCMW-2S Shallow Overburden									
				Apr-08	Aug-09	Oct-10	Nov-11	Nov-12	Aug-13	Jul-14	Jun-07	Nov-07	Apr-08	Apr-08 DUP	Aug-09	Oct-10	Nov-11	Nov-12	Aug-13	Jul-14
VOCs of Concern (µg/L)																				
Chloroform	70	100	70	ns	ns	<2.0	<2.0	ns	<2.0	<2.0	**0.83 J**	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
1,1-Dichloroethene	7	7	630	ns	ns	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	ns	ns	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	ns	ns	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	ns	ns	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Tetrachloroethene (PCE)	5	5	240	ns	ns	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Vinyl Chloride	2	2	4	ns	ns	nd	<2.0	ns	<2.0	<2.0	nd	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0
Additional VOCs (µg/L)																				
Acetone	6,000	na	na	ns	ns	<10	<10	ns	<10	<10	<10	<10	<10	<10	<10	<10	<10	ns	<10	<10
Benzene	5	na	2,900	ns	ns	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Carbon Disulfide	70	na	na	ns	ns	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Chloromethane	30	na	na	ns	ns	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
1,1-Dichloroethane	81	na	130	ns	ns	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	ns	ns	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Toluene	1,000	na	50,000	ns	ns	nd	<2.0	ns	<2.0	<2.0	nd	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0
1,4-Dioxane (µg/L)																				
1,4-Dioxane	3	na	na	ns	ns	<2.0	<2.0	ns	<2.0	<0.20	<2	<2	<2	<2	<2.0	<2.0	<2.0	ns	<2.0	<0.20
Contaminant of Concern																				
Cyanide (mg/L)	0.2	0.2	na	ns	ns	<0.01	<0.01	ns	<0.010	<0.010	<0.010	**0.0168**	<0.010	<0.010	<0.01	<0.01	<0.01	ns	<0.010	<0.010
Metals of Concern (mg/L)																				
Arsenic	0.01	0.05	na	ns	ns	<0.001	<0.001	ns	<0.001	<0.001	<0.0045	<0.010	<0.010	<0.010	**0.0073**	<0.001	<0.001	ns	<0.001	<0.001
Cadmium	0.005	0.005	na	ns	ns	<0.002	<0.002	ns	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	ns	<0.001	<0.001
Chromium	0.1	0.10	na	ns	ns	<0.005	<0.005	ns	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	ns	<0.005	<0.005
Lead	0.015	0.015	na	ns	ns	<0.001	<0.001	ns	<0.001	<0.001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.001	<0.001	ns	<0.001	<0.001
Manganese	0.84	na	na	ns	ns	<0.005	<0.005	ns	<0.010	<0.010	<0.015	**0.0015 J**	<0.0016	<0.0013	<0.005	<0.005	**0.0081**	ns	**0.035**	<0.005
Nickel	0.10	0.10	na	ns	ns	<0.005	<0.005	ns	<0.005	<0.005	<0.040	<0.040	<0.040	<0.040	<0.005	<0.005	<0.005	ns	<0.005	<0.005
NA - Laboratory																				
Methane (µg/L)	na	na	na	ns	ns	ns	ns	ns	ns	ns	---	---	---	---	**0.18**	**0.180**	ns	ns	ns	ns
Alkalinity (mg/L)	na	na	na	ns	ns	ns	ns	ns	ns	ns	---	---	---	---	**46**	**69**	ns	ns	ns	ns
Chloride (mg/L)	na	na	na	ns	ns	ns	ns	ns	ns	ns	---	---	---	---	**16**	**9.5**	ns	ns	ns	ns
Nitrite-Nitrogen (mg/L)	1	na	na	ns	ns	ns	ns	ns	ns	ns	---	---	---	---	<0.05	<0.05	ns	ns	ns	ns
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	ns	ns	ns	ns	ns	ns	ns	---	---	---	---	**0.097**	**0.17**	ns	ns	ns	ns
Nitrate-Nitrogen (mg/L)	10	na	na	ns	ns	ns	ns	ns	ns	ns	---	---	---	---	**0.097**	**0.16**	ns	ns	ns	ns
Sulfate, as SO_4 (mg/L)	500	na	na	ns	ns	ns	ns	ns	ns	ns	---	---	---	---	**5.7**	**16**	ns	ns	ns	ns
Total Organic Carbon (mg/L)	na	na	na	ns	ns	ns	ns	ns	ns	ns	---	---	---	---	ns	<0.5	ns	ns	ns	ns
Carbon Dioxide (mg/L)	na	na	na	ns	ns	ns	ns	ns	ns	ns	---	---	---	---	**40**	**44**	ns	ns	ns	ns
Total Suspended Solids (mg/L)	na	na	na	ns	ns	ns	ns	ns	ns	ns	---	---	---	---	<1.3	<10	ns	ns	ns	ns
NA - Field Screening																				
pH (SU)	na	na	na	ns	ns	**7.2**	**7.6**	ns	**8.0**	**6.3**	---	---	---	---	**2.66**	**6.7**	ns/g	ns	ns/g	ns/g
ORP (mV)	na	na	na	ns	ns	**113**	**30**	ns	**110**	**180**	---	---	---	---	**645.5**	**81**	ns/g	ns	ns/g	ns/g
Specific Conductance (µS/cm)	na	na	na	ns	ns	**593**	**634**	ns	**619**	**618**	---	---	---	---	**162**	**171**	ns/g	ns	ns/g	ns/g
Dissolved Oxygen (mg/L)	na	na	na	ns	ns	**6.7**	**5.8**	ns	**6.6**	**6.5 J***	---	---	---	---	**1.02**	**7.7**	ns/g	ns	ns/g	ns/g
Turbidity (ntu)	na	na	na	ns	ns	**0.13**	<5	ns	<5	<5	---	---	---	---	**0.59**	**5**	ns/g	ns	ns/g	ns/g
Temperature (°C)	na	na	na	ns	ns	**11**	**11**	ns	**12**	**11**	---	---	---	---	**15.09**	**14**	ns/g	ns	ns/g	ns/g

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date	NH AGQS	ROD ICL	GW-2	NHP_JCMW-2D Deep Overburden														
				Jun-07	Nov-07	Apr-08	Apr-08 DUP	Aug-09	Aug-09 DUP	Oct-10	Oct-10 DUP	Nov-11	Nov-11 DUP	Nov-12	Aug-13	Aug-13 DUP	Jul-14	Jul-14 DUP
VOCs of Concern (µg/L)																		
Chloroform	70	100	70	**0.84 J**	<5	<5	ns	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	ns	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	**4.9 J**	**5.7**	**5.7**	ns	**5.1**	**5.3**	**6.8**	**6.4**	**6.4**	**6.6**	**6.8**	**6.8**	**7**	**6.4**	**6.6**
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	ns	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	**96**	**100**	**100 J**	ns	**82**	**85**	**115**	**106**	**104**	**115**	**113**	**112 J**	**112 J**	**102**	**102**
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	ns	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	2	2	4	nd	nd	nd	ns	nd	nd	nd	nd	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Additional VOCs (µg/L)																		
Acetone	6,000	na	na	<10	<10	<10	ns	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	5	na	2,900	<5	<5	<5	ns	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	<5	<5	ns	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloromethane	30	na	na	<5	<5	<5	ns	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	ns	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	<5	<5	<5	ns	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Toluene	1,000	na	50,000	nd	nd	nd	ns	nd	nd	nd	nd	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,4-Dioxane (µg/L)																		
1,4-Dioxane	3	na	na	**15.1**	<2	**11.6**	ns	**17.8**	**18.4**	**19**	**21**	**14**	**18**	ns	**13**	**12**	**17**	**17**
Contaminant of Concern																		
Cyanide (mg/L)	0.2	0.2	na	<0.010	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010
Metals of Concern (mg/L)																		
Arsenic	0.01	0.05	na	<0.0083	**0.149**	**0.0146**	**0.0071 J**	**0.0101**	**0.0099**	**0.0189**	**0.0187**	**0.0294**	**0.0275**	**0.0209**	**0.0236**	**0.0237**	**0.0150**	**0.0147**
Cadmium	0.005	0.005	na	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	0.1	0.10	na	<0.010	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Lead	0.015	0.015	na	<0.010	<0.0049	<0.015	<0.015	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	0.84	na	na	**1.82**	**2.18**	**1.96**	**1.87**	**2.46**	**2.36**	**2.23**	**2.22**	**2.61**	**2.52**	**2.16**	**2.32**	**2.3**	**2.47**	**2.59**
Nickel	0.10	0.10	na	<0.040	<0.040	**0.018 J**	**0.022 J**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
NA - Laboratory																		
Methane (µg/L)	na	na	na	---	---	---	---	**15.00**	**15.00**	**21**	**19**	ns	ns	ns	ns	ns	**20**	**15**
Alkalinity (mg/L)	na	na	na	---	---	---	---	**59**	**58**	**57**	**67**	ns	ns	ns	ns	ns	**70**	**67**
Chloride (mg/L)	na	na	na	---	---	---	---	**77**	**76**	**88**	**87**	ns	ns	ns	ns	ns	**79**	**79**
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	---	<0.05	<0.05	<0.05	<0.05	ns	ns	ns	ns	ns	<0.05	<0.05
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	---	<0.05	<0.05	<0.05	<0.05	ns	ns	ns	ns	ns	<0.05	<0.05
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	---	<0.05	<0.05	<0.05	<0.05	ns	ns	ns	ns	ns	<0.05	<0.05
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	---	**42.0**	**42.0**	**52**	**50**	ns	ns	ns	ns	ns	**48**	**48**
Total Organic Carbon (mg/L)	na	na	na	---	---	---	---	ns	ns	**0.74**	**0.77**	ns	ns	ns	ns	ns	**1.0**	**0.88**
Carbon Dioxide (mg/L)	na	na	na	---	---	---	---	**32**	**31**	**23**	**27**	ns	ns	ns	ns	ns	**31**	**28**
Total Suspended Solids (mg/L)	na	na	na	---	---	---	---	**11**	**11**	**15.3**	**15.0**	ns	ns	ns	ns	ns	**10**	**11**
NA - Field Screening																		
pH (SU)	na	na	na	---	---	---	---	**6.29**	ns	**6.7**	ns	**6.8**	ns	**6.9**	**6.4**	ns	**6.1**	ns
ORP (mV)	na	na	na	---	---	---	---	**-43.8**	ns	**-75**	ns	**-61**	ns	**-64**	**-76**	ns	**-58**	ns
Specific Conductance (µS/cm)	na	na	na	---	---	---	---	**533**	ns	**540 J***	ns	**524**	ns	**516**	**521**	ns	**523**	ns
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	---	**0.99**	ns	**0.5**	ns	**0.7**	ns	**0.6**	**0.9**	ns	**0.9**	ns
Turbidity (ntu)	na	na	na	---	---	---	---	**1.02**	ns	<5	ns	**6 J***	ns	**6**	**7**	ns	**11**	ns
Temperature (°C)	na	na	na	---	---	---	---	**19.23**	ns	**14**	ns	**11**	ns	**12**	**18**	ns	**18**	ns

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen	NH AGQS	ROD ICL	GW-2	NHP_JCMW-4S Shallow Overburden		NHP_JCMW-4D Deep Overburden		NHP_JCMW-6 Shallow Overburden		NHP_MW-102S Overburden									
Sampling Event Date				Aug-13	Jul-14	Aug-13	Jul-14	Aug-13	Jul-14	May-07	May-07 DUP	Oct-07	Apr-08	Aug-09	Oct-10	Oct-11	Nov-12	Aug-13	Jul-14
VOCs of Concern (µg/L)																			
Chloroform	70	100	70	<2.0	<2.0	<2.0	<2.0	**2,050**	**2,270**	<5	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<2.0	<2.0	<2.0	<2.0	<40	<40	<5	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<2.0	<2.0	<2.0	<2.0	<40	<40	<5	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<2.0	<2.0	<2.0	<2.0	<40	<40	<5	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	<2.0	<2.0	**18 J**	**14**	<40	<40	<5	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Tetrachloroethene (PCE)	5	5	240	<2.0	<2.0	<2.0	<2.0	<40	<40	<5	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Vinyl Chloride	2	2	4	<2.0	<2.0	<2.0	<2.0	<40	<40	*nd*	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	*ns*	<2.0	<2.0
Additional VOCs (µg/L)																			
Acetone	6,000	na	na	<10	<10	<10	<10	<200	<200	<10	<10	<10	<10	<10	*ns/1*	<10	*ns*	<10	<10
Benzene	5	na	2,900	<2.0	<2.0	<2.0	<2.0	<40	<40	<5	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Carbon Disulfide	70	na	na	<2.0	<2.0	<2.0	<2.0	<40	<40	<5	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Chloromethane	30	na	na	<2.0	<2.0	<2.0	<2.0	<40	<40	<5	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<2.0	<2.0	<2.0	<2.0	<40	<40	<5	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	<2.0	<2.0	<2.0	<2.0	<40	<40	<5	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Toluene	1,000	na	50,000	<2.0	<2.0	<2.0	<2.0	<40	<40	*nd*	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na	na	<2.0	<0.20	**2.51**	**3.94**	<2.0	<0.20	<2	R	R	R	<2	*ns/1*	<2.0	*ns*	<2.0	<0.20
Contaminant of Concern																			
Cyanide (mg/L)	0.2	0.2	na	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<4.6	<5.2	<0.010	<0.010	<0.010	*ns/1*	<0.01	*ns*	<0.010	<0.010
Metals of Concern (mg/L)																			
Arsenic	0.01	0.05	na	<0.001	<0.001	**0.0044**	**0.0016**	<0.001	<0.001	**0.0038 J**	<0.010	<0.010	<0.010	<0.001	*ns/1*	<0.001	*ns*	<0.001	<0.001
Cadmium	0.005	0.005	na	<0.001	<0.001	<0.001	<0.001	**0.001**	<0.001	<0.005	<0.005	<0.0076	<0.005	<0.002	*ns/1*	<0.002	*ns*	<0.001	<0.001
Chromium	0.1	0.10	na	<0.005	<0.005	<0.005	<0.005	**0.015**	**0.0152**	<0.010	<0.010	<0.010	<0.010	<0.005	*ns/1*	<0.005	*ns*	<0.005	<0.005
Lead	0.015	0.015	na	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.010	<0.010	<0.010	<0.010	<0.001	*ns/1*	<0.001	*ns*	<0.001	<0.001
Manganese	0.84	na	na	<0.010	<0.010	**0.172**	**0.041**	**0.22**	**0.163**	<0.015	<0.015	<.0061	<0.015	<0.005	*ns/1*	**0.0054**	*ns*	<0.010	<0.010
Nickel	0.10	0.10	na	<0.005	<0.005	**0.0057**	**0.0057**	**0.0208**	**0.0149**	<0.040	<0.040	<0.040	**0.0016 J**	<0.005	*ns/1*	<0.005	*ns*	<0.005	<0.005
NA - Laboratory																			
Methane (µg/L)	na	na	na	*ns*	*ns*	*ns*	**2.7**	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na	na	*ns*	*ns*	*ns*	**79**	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Chloride (mg/L)	na	na	na	*ns*	*ns*	*ns*	**31**	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na	na	*ns*	*ns*	*ns*	<0.05	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	*ns*	*ns*	*ns*	**0.069**	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na	na	*ns*	*ns*	*ns*	**0.066**	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Sulfate, as SO_4 (mg/L)	500	na	na	*ns*	*ns*	*ns*	**24**	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na	na	*ns*	*ns*	*ns*	**0.99**	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Carbon Dioxide (mg/L)	na	na	na	*ns*	*ns*	*ns*	**23**	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Total Suspended Solids (mg/L)	na	na	na	*ns*	*ns*	*ns*	<2.5	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na	na	*ns/g*	*ns/g*	**6.3**	**6.9**	*ns/g*	*ns/g*	---	---	---	---	**5.01**	*ns/1*	*ns/g*	*ns*	*ns/g*	*ns/g*
ORP (mV)	na	na	na	*ns/g*	*ns/g*	**-10**	**76**	*ns/g*	*ns/g*	---	---	---	---	**200.2**	*ns/1*	*ns/g*	*ns*	*ns/g*	*ns/g*
Specific Conductance (µS/cm)	na	na	na	*ns/g*	*ns/g*	**334**	**309**	*ns/g*	*ns/g*	---	---	---	---	**69**	*ns/1*	*ns/g*	*ns*	*ns/g*	*ns/g*
Dissolved Oxygen (mg/L)	na	na	na	*ns/g*	*ns/g*	**1.3**	**1.3**	*ns/g*	*ns/g*	---	---	---	---	**8.91**	*ns/1*	*ns/g*	*ns*	*ns/g*	*ns/g*
Turbidity (ntu)	na	na	na	*ns/g*	*ns/g*	**11**	<5	*ns/g*	*ns/g*	---	---	---	---	**0.62**	*ns/1*	*ns/g*	*ns*	*ns/g*	*ns/g*
Temperature (°C)	na	na	na	*ns/g*	*ns/g*	**19**	**17**	*ns/g*	*ns/g*	---	---	---	---	**14.72**	*ns/1*	*ns/g*	*ns*	*ns/g*	*ns/g*

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date	NH AGQS	ROD ICL	GW-2	NHP_MW-102D Deep Overburden									NHP_MW-102R Bedrock								
				May-07	Oct-07	Apr-08	Aug-09	Oct-10	Oct-11	Nov-12	Aug-13	Jul-14	May-07	Nov-07	Apr-08	Jun-09	Oct-10	Oct-11	Nov-12	Aug-13	Jul-14
VOCs of Concern (µg/L)																					
Chloroform	70	100	70	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	*ns/1*	<2.0	*ns*	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	*ns/1*	<2.0	*ns*	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	*ns/1*	<2.0	*ns*	<2.0	<2.0
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	*ns/1*	<2.0	*ns*	<2.0	<2.0
Vinyl Chloride	2	2	4	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	*ns*	<2.0	<2.0	*nd*	*nd*	*nd*	*ns*	*ns/1*	<2.0	*ns*	<2.0	<2.0
Additional VOCs (µg/L)																					
Acetone	6,000	na	na	<10	<10	<10	<10	*ns/1*	<10	*ns*	<10	<10	<10	<10	<10	*ns*	*ns/1*	<10	*ns*	<10	<10
Benzene	5	na	2,900	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	*ns/1*	<2.0	*ns*	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	*ns/1*	<2.0	*ns*	<2.0	<2.0
Chloromethane	30	na	na	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	**2.3J**	<5	*ns*	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	*ns/1*	<2.0	*ns*	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	**0.51J**	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	*ns/1*	<2.0	*ns*	<2.0	<2.0
Toluene	1,000	na	50,000	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	*ns*	<2.0	<2.0	*nd*	*nd*	*nd*	*ns*	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,4-Dioxane (µg/L)																					
1,4-Dioxane	3	na	na	<2	R	R	<2	*ns/1*	<2.0	*ns*	<2.0	<0.20	<5	**2.22**	<5	*ns*	*ns/1*	<2.0	*ns*	<2.0	<0.20
Contaminant of Concern																					
Cyanide (mg/L)	0.2	0.2	na	<6.9	<0.010	<0.010	<0.010	*ns/1*	<0.01	*ns*	<0.010	**0.012**	*ns*	<0.010	<0.010	*ns*	*ns/1*	<0.01	<0.010	<0.010	<0.010
Metals of Concern (mg/L)													*ns*								
Arsenic	0.01	0.05	na	<0.010	<0.010	<0.010	<0.001	*ns/1*	<0.001	*ns*	<0.001	<0.001	*ns*	<0.010	<0.010	*ns*	*ns/1*	<0.001	<0.001	<0.001	<0.001
Cadmium	0.005	0.005	na	<0.005	<0.0076	<0.005	<0.002	*ns/1*	<0.002	*ns*	<0.001	<0.001	*ns*	<0.005	<0.005	*ns*	*ns/1*	<0.002	<0.001	<0.001	<0.001
Chromium	0.1	0.10	na	<0.010	<0.010	<0.010	<0.005	*ns/1*	<0.005	*ns*	<0.005	<0.005	*ns*	<0.010	<0.010	*ns*	*ns/1*	<0.005	<0.005	<0.005	**0.0057**
Lead	0.015	0.015	na	<0.010	<0.010	<0.010	<0.001	*ns/1*	<0.001	*ns*	<0.001	<0.001	*ns*	<0.0122	<0.010	*ns*	*ns/1*	**0.0017**	<0.001	<0.001	<0.001
Manganese	0.84	na	na	<0.015	<0.015	**0.0014 J**	<0.005	*ns/1*	**0.0137**	*ns*	<0.010	<0.010	*ns*	**0.0344**	**0.0804**	*ns*	*ns/1*	**0.1223**	**0.021**	**0.043**	**0.015**
Nickel	0.10	0.10	na	<0.040	<0.040	<0.040	<0.005	*ns/1*	<0.005	*ns*	<0.005	<0.005	*ns*	<0.040	**0.0036 J**	*ns*	*ns/1*	**0.005**	**0.0062**	<0.005	**0.0055**
NA - Laboratory																					
Methane (µg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	**74.2**	*ns*	*ns*
Chloride (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	**150**	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	**19**	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	<0.500	*ns*	*ns*
Carbon Dioxide (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Total Suspended Solids (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
NA - Field Screening																					
pH (SU)	na	na	na	---	---	---	**5.60**	*ns/1*	**6.0**	*ns*	**5.6**	**6.0**	---	---	---	*ns*	*ns/1*	**7.2**	**7.4**	**7.3**	*ns/ir*
ORP (mV)	na	na	na	---	---	---	**151.9**	*ns/1*	**227**	*ns*	**288**	**201**	---	---	---	*ns*	*ns/1*	**58**	**39**	**190**	*ns/ir*
Specific Conductance (µS/cm)	na	na	na	---	---	---	**260**	*ns/1*	**119**	*ns*	**265**	**121**	---	---	---	*ns*	*ns/1*	**631**	**677**	**641**	*ns/ir*
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	**13.36**	*ns/1*	**12**	*ns*	**10.2**	**9.9**	---	---	---	*ns*	*ns/1*	**6.6**	**5.5**	**5.6**	*ns/ir*
Turbidity (ntu)	na	na	na	---	---	---	**11.30**	*ns/1*	**18**	*ns*	<5	<5	---	---	---	*ns*	*ns/1*	**87**	**12**	**10**	*ns/ir*
Temperature (°C)	na	na	na	---	---	---	**13.26**	*ns/1*	**10**	*ns*	**12**	**13**	---	---	---	*ns*	*ns/1*	**11**	**10**	**13**	*ns/ir*

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen	NH AGQS	ROD ICL	GW-2	NHP_MW-106 Deep Overburden									NHP_MW-106R Bedrock									
Sampling Event Date				**May-07**	**Oct-07**	**Apr-08**	**Jun-09**	**Oct-10**	**Oct-11**	**Nov-12**	**Aug-13**	**Jul-14**	**May-07**	**Oct-07**	**Apr-08**	**Apr-08**	**Aug-09**	**Oct-10**	**Oct-11**	**Nov-12**	**Aug-13**	**Jul-14**
VOCs of Concern (µg/L)																						
Chloroform	70	100	70	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	**2.9 J**	<5	**5 J**	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	**9.3**	**4.9 J**	**11 J**	*ns*	**6.2**	*ns/1*	**3.8**	*ns*	**2.8**	**2.2**
Tetrachloroethene (PCE)	5	5	240	**2.5 J**	**2.6 J**	<5	<2	*ns/1*	<2.0	*ns*	<2.0	**2.4**	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Vinyl Chloride	2	2	4	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	*ns*	<2.0	<2.0	*nd*	*nd*	*nd*	*ns*	*nd*	*ns/1*	<2.0	*ns*	<2.0	<2.0
Additional VOCs (µg/L)																						
Acetone	6,000	na	na	<10	<10	<10	<10	*ns/1*	<10	*ns*	<10	<10	<10	<10	<10	*ns*	<10	*ns/1*	<10	*ns*	<10	<10
Benzene	5	na	2,900	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Chloromethane	30	na	na	<5	<5	**3.3J**	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	**1.9J**	<5	**1J**	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Toluene	1,000	na	50,000	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	*ns*	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,4-Dioxane (µg/L)																						
1,4-Dioxane	3	na	na	<2	R	R	<2	*ns/1*	<2.0	*ns*	<2.0	**1.01**	<2	R	<2	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	**0.47**
Contaminant of Concern																						
Cyanide (mg/L)	0.2	0.2	na	<0.010	**0.054 J**	<0.010	<0.010	*ns/1*	<0.01	*ns*	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	*ns/1*	<0.01	<0.010	<0.010	<0.010
Metals of Concern (mg/L)																						
Arsenic	0.01	0.05	na	<0.0044	<0.010	<0.010	<0.001	*ns/1*	**0.0013**	*ns*	<0.001	<0.001	<0.0048	<0.010	<0.010	<0.010	<0.001	*ns/1*	<0.001	<0.001	<0.001	<0.001
Cadmium	0.005	0.005	na	<0.005	<0.005	<0.005	<0.002	*ns/1*	<0.002	*ns*	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.002	*ns/1*	<0.002	<0.001	<0.001	<0.001
Chromium	0.1	0.10	na	<0.010	<0.010	<0.010	<0.005	*ns/1*	<0.005	*ns*	**0.012**	**0.0052**	<0.010	<0.0071	<0.010	<0.010	<0.005	*ns/1*	<0.005	<0.005	<0.005	<0.005
Lead	0.015	0.015	na	<0.010	<0.010	<0.010	<0.001	*ns/1*	**0.0013**	*ns*	<0.001	<0.001	<0.010	<0.010	<0.010	<0.010	<0.001	*ns/1*	<0.001	<0.001	<0.001	<0.001
Manganese	0.84	na	na	<0.015	**0.0041 J**	**0.0004 J**	<0.005	*ns/1*	**0.2222**	*ns*	<0.010	<0.010	**0.168**	**0.0819**	**0.223**	**0.129**	**0.126**	*ns/1*	**0.137**	**0.19**	**0.144**	**0.136**
Nickel	0.10	0.10	na	<0.040	**0.0025 J**	<0.040	<0.005	*ns/1*	<0.005	*ns*	<0.005	<0.005	<0.040	<0.040	<0.040	<0.040	<0.005	*ns/1*	<0.005	<0.005	<0.005	<0.005
NA - Laboratory																						
Methane (µg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	**55.00**	*ns/1*	*ns*	*ns*	*ns*	**18**
Alkalinity (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	**61**	*ns/1*	*ns*	**56.7**	*ns*	**58**
Chloride (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	**34**	*ns/1*	*ns*	**46**	*ns*	**42**
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	<0.05	*ns/1*	*ns*	*ns*	*ns*	<0.050
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	<0.05	*ns/1*	*ns*	*ns*	*ns*	<0.050
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	<0.05	*ns/1*	*ns*	*ns*	*ns*	<0.050
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	**21**	*ns/1*	*ns*	**19**	*ns*	**20**
Total Organic Carbon (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	<0.500	*ns*	<0.50
Carbon Dioxide (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	**1.3 J**	*ns/1*	*ns*	*ns*	*ns*	**0.89 J**
Total Suspended Solids (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	**1.3 J**	*ns/1*	*ns*	*ns*	*ns*	<2.5
NA - Field Screening																						
pH (SU)	na	na	na	---	---	---	**5.69**	*ns/1*	**6.4**	*ns*	**6.1**	**6.4**	---	---	---	---	**7.90**	*ns/1*	**8.1**	**8.0**	**7.7**	**8.2**
ORP (mV)	na	na	na	---	---	---	**218.3**	*ns/1*	**107**	*ns*	**203**	**208**	---	---	---	---	**-148.8**	*ns/1*	**96**	**-85**	**-128**	**-137**
Specific Conductance (µS/cm)	na	na	na	---	---	---	**658**	*ns/1*	**774**	*ns*	**753**	**701**	---	---	---	---	**277**	*ns/1*	**279**	**310**	**297**	**307**
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	**8.42**	*ns/1*	**6.9**	*ns*	**6.4**	**5.1**	---	---	---	---	**0.77**	*ns/1*	**0.8**	**0.6**	**0.6**	<0.5
Turbidity (ntu)	na	na	na	---	---	---	**0.29**	*ns/1*	<5	*ns*	<5	<5	---	---	---	---	**3.15**	*ns/1*	**30**	**34**	<5	<5
Temperature (°C)	na	na	na	---	---	---	**11.72**	*ns/1*	**10**	*ns*	**13**	**14**	---	---	---	---	**14.01**	*ns/1*	**10**	**11**	**13**	**14**

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date	NH AGQS	ROD ICL	GW-2	NHP_B-10S Shallow Overburden									NHP_MW-108S Shallow Overburden								
				May-07	Oct-07	Apr-08	Jun-09	Oct-10	Oct-11	Nov-12	Aug-13	Jul-14	May-07	Nov-07	Apr-08	Aug-09	Oct-10	Oct-11	Jul-12	Aug-13	Jul-14
VOCs of Concern (µg/L)																					
Chloroform	70	100	70	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	*ns/1*	<2.0	<1.0	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	*ns/1*	<2.0	<1.0	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	**2.6 J**	**2.2 J**	**2.5 J**	<2	*ns/1*	<2.0	<1.0	<2.0	**3.1 J**
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5.0	<5	<5	<2	*ns/1*	<2.0	<1.0	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	**25**	**26**	**16 J**	**7.3**	*ns/1*	**8.1**	**4.8**	**6.4**	**17**
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5.0	<5.0	<5.0	<2	*ns/1*	<2.0	<1.0	<2.0	<2.0
Vinyl Chloride	2	2	4	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	*ns*	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	<1.0	<2.0	<2.0
Additional VOCs (µg/L)																					
Acetone	6,000	na	na	<10	<10	<10	<10	*ns/1*	<10	*ns*	<10	<10	<10	<10	<10	<10	*ns/1*	<10	<1.0	<10	<10
Benzene	5	na	2,900	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	*ns/1*	<2.0	<1.0	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	*ns/1*	<2.0	<1.0	<2.0	<2.0
Chloromethane	30	na	na	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	*ns/1*	<2.0	<1.0	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	*ns/1*	<2.0	<1.0	**3.5**	**6.3 J**
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	*ns/1*	<2.0	<1.0	<2.0	<2.0
Toluene	1,000	na	50,000	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	*ns*	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	<1.0	<2.0	<2.0
1,4-Dioxane (µg/L)																					
1,4-Dioxane	3	na	na	<2	<2	<2	<2	*ns/1*	<2.0	*ns*	<2.0	<0.20	<2	<5	<2	<2	*ns/1*	<2.0	*ns*	<2.0	**0.29**
Contaminant of Concern																					
Cyanide (mg/L)	0.2	0.2	na	<0.010	**0.0017 J**	<0.010	<0.010	*ns/1*	<0.01	*ns*	<0.010	<0.010	<0.010	**0.0109**	<0.010	<0.010	*ns/1*	<0.01	*ns*	<0.010	<0.010
Metals of Concern (mg/L)																					
Arsenic	0.01	0.05	na	<0.0057	<0.010	<0.010	<0.001	*ns/1*	<0.001	*ns*	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	*ns/1*	<0.001	*ns*	<0.001	<0.001
Cadmium	0.005	0.005	na	<0.005	<0.005	<0.005	<0.002	*ns/1*	<0.002	*ns*	<0.001	<0.001	**0.0721**	**0.0972**	**0.0744**	**0.1161**	*ns/1*	**0.1006**	*ns*	**0.1607**	**0.1395**
Chromium	0.1	0.10	na	<0.010	<0.0018	<0.010	<0.005	*ns/1*	<0.005	*ns*	<0.005	<0.005	**0.0641**	**0.093**	**0.0943**	**0.0821**	*ns/1*	**0.0517**	*ns*	**0.0177**	**0.0101**
Lead	0.015	0.015	na	<0.010	<0.015	<0.015	<0.001	*ns/1*	<0.001	*ns*	<0.001	<0.001	<0.010	<0.001	<0.010	<0.001	*ns/1*	<0.001	*ns*	<0.001	<0.001
Manganese	0.84	na	na	**0.0077 J**	**0.0371 J**	**0.0673**	<0.005	*ns/1*	**0.0381**	*ns*	**0.526**	<0.005	**0.0102 J**	**0.0085 J**	**0.012 J**	<0.005	*ns/1*	<0.005	*ns*	<0.010	**0.076**
Nickel	0.10	0.10	na	<0.040	<0.040	<0.040	<0.005	*ns/1*	<0.005	*ns*	<0.005	<0.005	**0.0317 J**	**0.0308 J**	**0.027 J**	**0.0396**	*ns/1*	**0.0328**	*ns*	**0.0410**	**0.0366**
NA - Laboratory																					
Methane (µg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	**0.17**	*ns/1*	*ns*	*ns*	*ns*	**3.6**
Alkalinity (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	**34**	*ns/1*	*ns*	*ns*	*ns*	**60**
Chloride (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	**13**	*ns/1*	*ns*	*ns*	*ns*	**21**
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	<0.05	*ns/1*	*ns*	*ns*	*ns*	<0.050
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	**4.6**	*ns/1*	*ns*	*ns*	*ns*	**0.69**
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	**4.6**	*ns/1*	*ns*	*ns*	*ns*	**0.69**
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	**14**	*ns/1*	*ns*	*ns*	*ns*	**24**
Total Organic Carbon (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	**0.95**
Carbon Dioxide (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	**25**	*ns/1*	*ns*	*ns*	*ns*	**66**
Total Suspended Solids (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	<1.3	*ns/1*	*ns*	*ns*	*ns*	<2.5
NA - Field Screening																					
pH (SU)	na	na	na	---	---	---	**4.10**	*ns/1*	*ns/g*	*ns*	*ns/g*	*ns/g*	---	---	---	**5.67**	*ns/1*	*ns/g*	**6.2**	*ns/g*	*ns/g*
ORP (mV)	na	na	na	---	---	---	**605.4**	*ns/1*	*ns/g*	*ns*	*ns/g*	*ns/g*	---	---	---	**599.6**	*ns/1*	*ns/g*	**60**	*ns/g*	*ns/g*
Specific Conductance (µS/cm)	na	na	na	---	---	---	**200**	*ns/1*	*ns/g*	*ns*	*ns/g*	*ns/g*	---	---	---	**181**	*ns/1*	*ns/g*	**235**	*ns/g*	*ns/g*
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	**8.38**	*ns/1*	*ns/g*	*ns*	*ns/g*	*ns/g*	---	---	---	**4.21**	*ns/1*	*ns/g*	**1.4**	*ns/g*	*ns/g*
Turbidity (ntu)	na	na	na	---	---	---	**4.42**	*ns/1*	*ns/g*	*ns*	*ns/g*	*ns/g*	---	---	---	**0.54**	*ns/1*	*ns/g*	**1**	*ns/g*	*ns/g*
Temperature (°C)	na	na	na	---	---	---	**12.56**	*ns/1*	*ns/g*	*ns*	*ns/g*	*ns/g*	---	---	---	**23.71**	*ns/1*	*ns/g*	**19**	*ns/g*	*ns/g*

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen	NH AGQS	ROD ICL	GW-2	NHP_MW-108D Deep Overburden									NHP_MW-109S Shallow Overburden								
Sampling Event Date				**May-07**	**Nov-07**	**Apr-08**	**Aug-09**	**Oct-10**	**Oct-11**	**Nov-12**	**Aug-13**	**Jul-14**	**May-07**	**Apr-08**	**Apr-08 DUP**	**Aug-09**	**Oct-10**	**Oct-11**	**Nov-12**	**Aug-13**	**Jul-14**
VOCs of Concern (µg/L)																					
Chloroform	70	100	70	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Vinyl Chloride	2	2	4	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	*ns*	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	*ns*	<2.0	<2.0
Additional VOCs (µg/L)																					
Acetone	6,000	na	na	<10	<10	<10	<10	*ns/1*	<10	*ns*	<10	<10	<10	<10	<10	<10	*ns/1*	<10	*ns*	<10	<10
Benzene	5	na	2,900	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Chloromethane	30	na	na	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	**4.2J**	<5	**5.2**	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Toluene	1,000	na	50,000	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	*ns*	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,4-Dioxane (µg/L)																					
1,4-Dioxane	3	na	na	<2	<2	<2	<2	*ns/1*	<2.0	*ns*	<2.0	<0.20	<2	R	R	<2	*ns/1*	<2.0	*ns*	<2.0	<0.20
Contaminant of Concern																					
Cyanide (mg/L)	0.2	0.2	na	<0.010	**0.0041 J**	<0.010	<0.010	*ns/1*	<0.01	*ns*	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	*ns/1*	<0.010	*ns*	<0.010	<0.010
Metals of Concern (mg/L)																					
Arsenic	0.01	0.05	na	<0.0057	<0.010	<0.010	<0.001	*ns/1*	**0.0037**	*ns*	**0.0021**	**0.0010**	<0.010	<0.010	<0.010	<0.001	*ns/1*	**0.0011**	*ns*	<0.001	<0.001
Cadmium	0.005	0.005	na	<0.005	<0.005	<0.002	<0.002	*ns/1*	<0.002	*ns*	<0.001	<0.001	<0.005	<0.005	<0.002	<0.002	*ns/1*	<0.002	*ns*	<0.001	<0.001
Chromium	0.1	0.10	na	<0.010	<0.010	<0.010	<0.005	*ns/1*	<0.005	*ns*	**0.0079**	**0.0069**	<0.010	<0.010	<0.010	<0.005	*ns/1*	<0.005	*ns*	<0.005	**0.0051**
Lead	0.015	0.015	na	<0.010	<0.010	<0.010	<0.001	*ns/1*	<0.001	*ns*	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	*ns/1*	<0.001	*ns*	<0.001	<0.001
Manganese	0.84	na	na	**0.0358**	<0.0025	**0.0308**	<0.005	*ns/1*	**0.3496**	*ns*	**0.148**	**0.108**	**0.0775**	**0.0292**	**0.0269**	<0.005	*ns/1*	**0.0668**	*ns*	<0.010	**0.024**
Nickel	0.10	0.10	na	<0.040	<0.040	<0.040	<0.005	*ns/1*	**0.0075**	*ns*	<0.005	<0.005	<0.040	<0.040	<0.040	<0.005	*ns/1*	<0.005	*ns*	<0.005	<0.005
NA - Laboratory																					
Methane (µg/L)	na	na	na	---	---	---	**0.48**	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na	na	---	---	---	**43**	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Chloride (mg/L)	na	na	na	---	---	---	**120**	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	<0.05	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	**2.2**	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	**2.2**	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	**17**	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Carbon Dioxide (mg/L)	na	na	na	---	---	---	**9**	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Total Suspended Solids (mg/L)	na	na	na	---	---	---	<1.3	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
NA - Field Screening																					
pH (SU)	na	na	na	---	---	---	**6.52**	*ns/1*	**6.6**	*ns*	**6.3**	**6.8**	---	---	---	**2.41**	*ns/1*	*ns/g*	*ns*	*ns/g*	*ns/g*
ORP (mV)	na	na	na	---	---	---	**123.0**	*ns/1*	**106**	*ns*	**421**	**123**	---	---	---	**679.8**	*ns/1*	*ns/g*	*ns*	*ns/g*	*ns/g*
Specific Conductance (µS/cm)	na	na	na	---	---	---	**521**	*ns/1*	**625**	*ns*	**700**	**701**	---	---	---	**91**	*ns/1*	*ns/g*	*ns*	*ns/g*	*ns/g*
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	**3.25**	*ns/1*	**3.6**	*ns*	**3.7**	**3.7**	---	---	---	**7.10**	*ns/1*	*ns/g*	*ns*	*ns/g*	*ns/g*
Turbidity (ntu)	na	na	na	---	---	---	**0.72**	*ns/1*	**18**	*ns*	<5	<5	---	---	---	**0.60**	*ns/1*	*ns/g*	*ns*	*ns/g*	*ns/g*
Temperature (°C)	na	na	na	---	---	---	**16.82**	*ns/1*	**11**	*ns*	**14**	**13**	---	---	---	**17.61**	*ns/1*	*ns/g*	*ns*	*ns/g*	*ns/g*

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen	NH AGQS	ROD ICL	GW-2	NHP_MW-109D Deep Overburden									NHP_MW-109R Bedrock									
Sampling Event Date				**May-07**	**Oct-07**	**Apr-08**	**Aug-09**	**Oct-10**	**Oct-11**	**Nov-12**	**Aug-13**	**Jul-14**	**Jun-07**	**Oct-07**	**Apr-08**	**Apr-08**	**Aug-09**	**Oct-10**	**Oct-11**	**Nov-12**	**Aug-13**	**Jul-14**
VOCs of Concern (µg/L)																						
Chloroform	70	100	70	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Vinyl Chloride	2	2	4	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	*ns*	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	*ns*	<2.0	<2.0
Additional VOCs (µg/L)																						
Acetone	6,000	na	na	<10	<10	<10	<10	*ns/1*	<10	*ns*	<10	<10	<10	<10	<10	*ns*	<10	*ns/1*	<10	*ns*	<10	<10
Benzene	5	na	2,900	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Chloromethane	30	na	na	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0
Toluene	1,000	na	50,000	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	*ns*	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	*ns*	<2.0	<2.0
1,4-Dioxane (µg/L)																						
1,4-Dioxane	3	na	na	<2	<2	R	<2	*ns/1*	<2.0	*ns*	<2.0	<0.20	<2	<2	R	*ns*	<2	*ns/1*	<2.0	*ns*	<2.0	**0.38**
Contaminant of Concern																						
Cyanide (mg/L)	0.2	0.2	na	<0.010	**0.0034 J**	<0.010	**0.039**	*ns/1*	<0.010	*ns*	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	*ns/1*	<0.010	<0.010	<0.010	<0.010
Metals of Concern (mg/L)																						
Arsenic	0.01	0.05	na	**0.0298**	<0.0073	**0.0214**	**0.026**	*ns/1*	**0.0214**	*ns*	**0.0223**	**0.0254**	<0.010	<0.010	<0.010	<0.010	<0.001	*ns/1*	<0.001	<0.001	<0.001	<0.001
Cadmium	0.005	0.005	na	<0.005	<0.005	<0.005	<0.002	*ns/1*	<0.002	*ns*	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.002	*ns/1*	<0.002	<0.001	<0.001	<0.001
Chromium	0.1	0.10	na	<0.010	<0.010	<0.010	<0.005	*ns/1*	**0.014**	*ns*	**0.0184**	**0.0238**	<0.010	<0.0014	<0.010	<0.010	<0.005	*ns/1*	<0.005	<0.005	<0.005	<0.005
Lead	0.015	0.015	na	<0.010	<0.010	<0.010	<0.001	*ns/1*	**0.0103**	*ns*	**0.0101**	**0.0147**	<0.010	<0.010	<0.010	<0.010	<0.001	*ns/1*	<0.001	<0.001	<0.001	<0.001
Manganese	0.84	na	na	**0.463**	**0.169**	**0.396**	**0.4165**	*ns/1*	**0.5845**	*ns*	**0.603**	**0.802**	**0.0699**	**0.0083J**	**0.0655**	**0.0118J**	**0.012**	*ns/1*	**0.0294**	**0.015**	**0.018**	**0.013**
Nickel	0.10	0.10	na	<0.040	**0.0029 J**	<0.040	<0.005	*ns/1*	**0.0104**	*ns*	**0.0156**	**0.0195**	<0.040	<0.040	**0.0038J**	<0.040	<0.005	*ns/1*	<0.005	<0.005	<0.005	<0.005
NA - Laboratory																						
Methane (µg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	**199**	*ns*	*ns*
Chloride (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	**45**	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	<1.0	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	<0.500	*ns*	*ns*
Carbon Dioxide (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
Total Suspended Solids (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*
NA - Field Screening																						
pH (SU)	na	na	na	---	---	---	**5.61**	*ns/1*	**7.2**	*ns*	**7.0**	*ns/t*	---	---	---	---	**7.93**	*ns/1*	**8.2**	**8.4**	**7.9**	*ns/ir*
ORP (mV)	na	na	na	---	---	---	**175.3**	*ns/1*	**-113**	*ns*	**-95**	*ns/t*	---	---	---	---	**573.9**	*ns/1*	**-145**	**-202**	**-179**	*ns/ir*
Specific Conductance (µS/cm)	na	na	na	---	---	---	**252**	*ns/1*	**321**	*ns*	**305**	*ns/t*	---	---	---	---	**430**	*ns/1*	**507**	**482**	**516**	*ns/ir*
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	**1.44**	*ns/1*	<0.5	*ns*	**0.8**	*ns/t*	---	---	---	---	**0.78**	*ns/1*	<0.5	<0.5	<0.5	*ns/ir*
Turbidity (ntu)	na	na	na	---	---	---	**3.73**	*ns/1*	**662 J***	*ns*	**627**	*ns/t*	---	---	---	---	**2.27**	*ns/1*	**57**	<5	<5	*ns/ir*
Temperature (°C)	na	na	na	---	---	---	**23.08**	*ns/1*	**12**	*ns*	**17**	*ns/t*	---	---	---	---	**20.51**	*ns/1*	**11**	**11**	**18**	*ns/ir*

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen	NH AGQS	ROD ICL	GW-2	NHP_MW-202S Shallow Overburden										NHP_MW-202D Deep Overburden								
Sampling Event Date				Jun-07	Nov-07	Nov-07 DUP	Apr-08	Aug-09	Oct-10	Oct-11	Jul-12	Aug-13	Jul-14	Jun-07	Oct-07	Apr-08	Aug-09	Oct-10	Nov-11	Nov-12	Aug-13	Jul-14
VOCs of Concern (µg/L)																						
Chloroform	70	100	70	<5	<5	<5	<5	<2	*ns/1*	<2.0	<1.0	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	<5	<2	*ns/1*	<2.0	<1.0	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<5	<5	<5	<5	<2	*ns/1*	<2.0	<1.0	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<5	<2	*ns/1*	<2.0	<1.0	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	<5	<5	<5	**24**	**2.9**	*ns/1*	<2.0	**2.9**	<2.0	**9.6**	**0.67J**	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<5	<2	*ns/1*	<2.0	<1.0	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Vinyl Chloride	2	2	4	*nd*	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	<1.0	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	*ns*	<2.0	<2.0
Additional VOCs (µg/L)																						
Acetone	6,000	na	na	<10	<10	<10	<10	<10	*ns/1*	<10	<1.0	<10	<10	<10	<10	<10	<10	<10	<10	*ns*	<10	<10
Benzene	5	na	2,900	<5	<5	<5	<5	<2	*ns/1*	<2.0	<1.0	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	<5	<5	<5	<2	*ns/1*	<2.0	<1.0	<2.0	<2.0	**8.4J**	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Chloromethane	30	na	na	<5	**2.2J**	**2.5J**	<5	<2	*ns/1*	<2.0	<1.0	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<5	<2	*ns/1*	<2.0	<1.0	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	<5	<5	<5	<5	<2	*ns/1*	<2.0	<1.0	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Toluene	1,000	na	50,000	*nd*	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2.0	<1.0	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	*ns*	<2.0	<2.0
1,4-Dioxane (µg/L)																						
1,4-Dioxane	3	na	na	<2	<2	<2	---	<2	*ns/1*	<2.0	*ns*	<2.0	**0.29**	<2	<2	R	<2	<2.0	<2.0	*ns*	<2.0	<0.20
Contaminant of Concern																						
Cyanide (mg/L)	0.2	0.2	na	<0.010	<0.010	<0.010	<0.010	<0.010	*ns/1*	<0.010	*ns*	<0.010	<0.010	<0.010	**0.0068J**	<0.010	<0.010	<0.01	<0.010	*ns*	<0.010	<0.010
Metals of Concern (mg/L)																						
Arsenic	0.01	0.05	na	<0.010	<0.010	<0.010	<0.010	<0.001	*ns/1*	<0.001	*ns*	<0.001	<0.001	<0.007	<0.010	<0.010	<0.001	**0.0021**	<0.001	*ns*	<0.001	<0.001
Cadmium	0.005	0.005	na	<0.005	<0.005	<0.005	<0.005	**0.0174**	*ns/1*	<0.002	*ns*	<0.001	<0.001	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	*ns*	<0.002	<0.002
Chromium	0.1	0.10	na	**0.128**	<0.0032	<0.0034	**0.0031J**	**0.0172**	*ns/1*	**0.0128**	*ns*	**0.0210**	**0.0087**	<0.010	<0.0025	**0.033J**	<0.005	**0.0239**	**0.0053**	*ns*	**0.0162**	**0.0226**
Lead	0.015	0.015	na	<0.010	<0.0048	<0.010	<0.010	<0.001	*ns/1*	<0.001	*ns*	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001
Manganese	0.84	na	na	<0.0015	**0.0219**	**0.0213**	**0.00036J**	**0.031**	*ns/1*	**0.0055**	*ns*	<0.010	**0.027**	<0.015	<0.015	**0.00081J**	<0.005	<0.005	<0.005	*ns*	<0.005	<0.005
Nickel	0.10	0.10	na	<0.040	<0.040	<0.040	**0.0025J**	<0.005	*ns/1*	<0.005	*ns*	<0.005	**0.0063**	<0.040	<0.040	**0.0024J**	**0.0114**	<0.005	<0.005	*ns*	**0.0160**	**0.0180**
NA - Laboratory																						
Methane (µg/L)	na	na	na	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na	na	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Chloride (mg/L)	na	na	na	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na	na	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Carbon Dioxide (mg/L)	na	na	na	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Total Suspended Solids (mg/L)	na	na	na	---	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
NA - Field Screening																						
pH (SU)	na	na	na	---	---	---	---	*ns*	*ns/1*	*ns/g*	**5.6**	*ns/g*	*ns/g*	---	---	---	**6.35**	**6.8**	**6.3**	*ns*	**6.1**	**6.6**
ORP (mV)	na	na	na	---	---	---	---	*ns*	*ns/1*	*ns/g*	**235**	*ns/g*	*ns/g*	---	---	---	**18.7**	**211**	**115**	*ns*	**189**	**169**
Specific Conductance (µS/cm)	na	na	na	---	---	---	---	*ns*	*ns/1*	*ns/g*	**232**	*ns/g*	*ns/g*	---	---	---	**566**	**535**	**625**	*ns*	**676**	**696**
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	---	*ns*	*ns/1*	*ns/g*	**7.1**	*ns/g*	*ns/g*	---	---	---	**5.79**	**2.9**	**5.2**	*ns*	**6.2**	**5.0**
Turbidity (ntu)	na	na	na	---	---	---	---	*ns*	*ns/1*	*ns/g*	**0**	*ns/g*	*ns/g*	---	---	---	**1.26**	**5**	<5	*ns*	<5	<5
Temperature (°C)	na	na	na	---	---	---	---	*ns*	*ns/1*	*ns/g*	**15**	*ns/g*	*ns/g*	---	---	---	**20.59**	**13**	**11**	*ns*	**15**	**13**

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date	NH AGQS	ROD ICL	GW-2	NHP_MW-203S Shallow Overburden										NHP_MW-203D Deep Overburden								
				May-07	Nov-07	Apr-08	Apr-08 DUP	Aug-09	Oct-10	Nov-11	Nov-12	Aug-13	Jul-14	May-07	Nov-07	Apr-08	Aug-09	Oct-10	Nov-11	Nov-12	Aug-13	Jul-14
VOCs of Concern (µg/L)																						
Chloroform	70	100	70	<5	<5	<5	<5	<2	ns	ns	ns	ns	ns	<5	<5	<5	<2	ns/1	<2.0	ns	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	<5	<2	ns	ns	ns	ns	ns	<5	<5	<5	<2	ns/1	<2.0	ns	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	**9.5**	<5	**4.5J**	**4.7J**	**3.6**	ns	ns	ns	ns	ns		**2.1J**	**1.6J**	**2.2**	ns/1	<2.0	ns	**4.3**	**5.2 J**
1,1,1-Trichloroethane	200	200	27,000	**1.3J**	<5	<5	<5	<2	ns	ns	ns	ns	ns	<5	<5	<5	<2	ns/1	<2.0	ns	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	**13**	**26**	**15**	**14**	**8.6**	ns	ns	ns	ns	ns	**5.7**	**3J**	**2.3J**	**2.1**	ns/1	**2.4**	ns	**5.2 J**	**5.5**
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<5	<2	ns	ns	ns	ns	ns	<5	<5	<5	<2	ns/1	<2.0	ns	<2.0	<2.0
Vinyl Chloride	2	2	4	nd	nd	nd	nd	nd	ns	ns	ns	ns	ns	nd	nd	nd	nd	ns/1	<2.0	ns	<2.0	<2.0
Additional VOCs (µg/L)																						
Acetone	6,000	na	na	<10	<10	<10	<10	<10	ns	ns	ns	ns	ns	<10	<10	<10	<10	ns/1	<10	ns	<10	<10
Benzene	5	na	2,900	<5	<5	<5	<5	<2	ns	ns	ns	ns	ns	<5	<5	<5	<2	ns/1	<2.0	ns	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	<5	<5	<5	<2	ns	ns	ns	ns	ns	<5	<5	<5	<2	ns/1	<2.0	ns	<2.0	<2.0
Chloromethane	30	na	na	<5	<5	<5	<5	**3.5**	ns	ns	ns	ns	ns	<5	<5	<5	<2	ns/1	<2.0	ns	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<5	**2.1**	ns	ns	ns	ns	ns	<5	<5	<5	<2	ns/1	<2.0	ns	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	**0.67J**	<5	<5	<5	<2	ns	ns	ns	ns	ns	<5	<5	<5	<2	ns/1	<2.0	ns	<2.0	<2.0
Toluene	1,000	na	50,000	nd	nd	nd	nd	nd	ns	ns	ns	ns	ns	nd	nd	nd	nd	ns/1	<2.0	ns	<2.0	<2.0
1,4-Dioxane (µg/L)																						
1,4-Dioxane	3	na	na	<2	<2	R	---	<2	ns	ns	ns	ns	ns	<2	<2	R	<2	ns/1	<2.0	ns	<2.0	**0.45**
Contaminant of Concern																						
Cyanide (mg/L)	0.2	0.2	na	<0.010	<0.010	<0.010	<0.010	<0.010	ns	ns	ns	ns	ns	<0.010	<0.010	<0.010	<0.010	ns/1	<0.010	ns	<0.010	<0.010
Metals of Concern (mg/L)																						
Arsenic	0.01	0.05	na	<0.0041	<0.010	<0.010	<0.010	<0.001	ns	ns	ns	ns	ns	<0.0061	<0.010	<0.010	**0.0021**	ns/1	**0.0022**	ns	**0.0031**	**0.0019**
Cadmium	0.005	0.005	na	<0.005	<0.005	<0.005	<0.005	<0.002	ns	ns	ns	ns	ns	<0.005	<0.005	<0.005	<0.002	ns/1	<0.002	ns	<0.002	<0.001
Chromium	0.1	0.10	na	**0.0698**	**0.0504**	**0.0699**	**0.0504**	**0.015**	ns	ns	ns	ns	ns	<0.010	<0.010	<0.010	<0.005	ns/1	<0.005	ns	<0.005	<0.005
Lead	0.015	0.015	na	<0.010	<0.0055	<0.010	<0.010	<0.001	ns	ns	ns	ns	ns	<0.010	<0.010	<0.010	<0.001	ns/1	**0.0012**	ns	<0.001	<0.001
Manganese	0.84	na	na	<0.015	<0.015	**0.0044J**	**0.0021J**	<0.005	ns	ns	ns	ns	ns	**0.167**	**0.113**	**0.109**	**0.1007**	ns/1	**0.098**	ns	**0.087**	**0.097**
Nickel	0.10	0.10	na	**0.331**	**0.344**	**0.210**	**0.206**	**0.1361**	ns	ns	ns	ns	ns	<0.040	**0.004J**	**0.0026J**	<0.005	ns/1	<0.005	ns	<0.005	<0.005
NA - Laboratory																						
Methane (µg/L)	na	na	na	---	---	---	---	**0.48**	ns	ns	ns	ns	ns	---	---	---	**3.10**	ns/1	ns	ns	ns	**4.0**
Alkalinity (mg/L)	na	na	na	---	---	---	---	**49**	ns	ns	ns	ns	ns	---	---	---	**88**	ns/1	ns	ns	ns	**83**
Chloride (mg/L)	na	na	na	---	---	---	---	**8.1**	ns	ns	ns	ns	ns	---	---	---	**84**	ns/1	ns	ns	ns	**160**
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	---	<0.05	ns	ns	ns	ns	ns	---	---	---	<0.05	ns/1	ns	ns	ns	<0.050
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	---	**1.8**	ns	ns	ns	ns	ns	---	---	---	<0.05	ns/1	ns	ns	ns	<0.050
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	---	**1.8**	ns	ns	ns	ns	ns	---	---	---	<0.05	ns/1	ns	ns	ns	<0.050
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	---	**7.6**	ns	ns	ns	ns	ns	---	---	---	**27**	ns/1	ns	ns	ns	**26**
Total Organic Carbon (mg/L)	na	na	na	---	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns/1	ns	ns	ns	**0.73**
Carbon Dioxide (mg/L)	na	na	na	---	---	---	---	**38**	ns	ns	ns	ns	ns	---	---	---	**13**	ns/1	ns	ns	ns	**12**
Total Suspended Solids (mg/L)	na	na	na	---	---	---	---	<1.3	ns	ns	ns	ns	ns	---	---	---	**8.2**	ns/1	ns	ns	ns	**21**
NA - Field Screening																						
pH (SU)	na	na	na	---	---	---	---	**4.24**	ns	ns	ns	ns	ns	---	---	---	**6.67**	ns/1	**6.7**	ns	**6.7**	**5.6**
ORP (mV)	na	na	na	---	---	---	---	**639.6**	ns	ns	ns	ns	ns	---	---	---	**-87.4**	ns/1	**-82**	ns	**-74**	**-33**
Specific Conductance (µS/cm)	na	na	na	---	---	---	---	**168**	ns	ns	ns	ns	ns	---	---	---	**520**	ns/1	**521**	ns	**425**	**410**
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	---	**4.04**	ns	ns	ns	ns	ns	---	---	---	**1.20**	ns/1	<0.5	ns	**0.8**	**0.5**
Turbidity (ntu)	na	na	na	---	---	---	---	**0.32**	ns	ns	ns	ns	ns	---	---	---	**1.37**	ns/1	**18**	ns	**21**	**7**
Temperature (°C)	na	na	na	---	---	---	---	**14.97**	ns	ns	ns	ns	ns	---	---	---	**20.61**	ns/1	**12**	ns	**15**	**14**

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen	NH AGQS	ROD ICL	GW-2	NHP_MW-204S Shallow Overburden									NHP_MW-204D Deep Overburden											
Sampling Event Date				Jun-07	Nov-07	Apr-08	Aug-09	Oct-10	Nov-11	Nov-12	Aug-13	Jul-14	Jun-07	Nov-07	Apr-08	Aug-09	Oct-10	Oct-11	Oct-11 DUP	Nov-12	Aug-13	Aug-13 DUP	Jul-14	Jul-14 DUP
VOCs of Concern (µg/L)																								
Chloroform	70	100	70	**5.8**	**230**	**710**	**11**	*ns/1*	**115**	*ns*	**12**	**7.1**	<5	<5	<5	<2	<2.0	<2.0	<2.0	*ns*	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	<2	*ns/1*	<2	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<2.0	*ns*	<2.0	<2.0	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<5	<5	<5	<2	*ns/1*	<2	*ns*	<2.0	<2.0	**0.86J**	<5	<5	<2	**2.3**	<2.0	<2.0	*ns*	<2.0	<2.0	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<2	*ns/1*	<2	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<2.0	*ns*	<2.0	<2.0	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	**7.9**	**4.4J**	**3.3J**	**5**	*ns/1*	**3.5**	*ns*	**7.1**	**11**	**4.5J**	**3.4J**	**3.3J**	**3.6**	**4.3**	**3.5**	**3.3**	*ns*	**4.7**	**4.8**	**4.7**	**4.8**
Tetrachloroethene (PCE)	5	5	240	**2.9J**	<5	**2.9J**	<2	*ns/1*	<2	*ns*	**3.2**	**2.9**	<5	<5	<5	<2	<2.0	<2.0	<2.0	*ns*	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	2	2	4	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2	*ns*	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	<2.0	*ns*	<2.0	<2.0	<2.0	<2.0
Additional VOCs (µg/L)																								
Acetone	6,000	na	na	<10	<10	<10	<10	*ns/1*	<10	*ns*	<10	<10	<10	<10	<10	<10	<10	<10	<10	*ns*	<10	<10	<10	<10
Benzene	5	na	2,900	<5	<5	<5	<2	*ns/1*	<2	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<2.0	*ns*	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	<5	<5	<2	*ns/1*	<2	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<2.0	*ns*	<2.0	<2.0	<2.0	<2.0
Chloromethane	30	na	na	<5	<5	<5	<2	*ns/1*	<2	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<2.0	*ns*	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<2	*ns/1*	<2	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<2.0	*ns*	<2.0	<2.0	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	<5	<5	<5	<2	*ns/1*	<2	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<2.0	*ns*	<2.0	<2.0	<2.0	<2.0
Toluene	1,000	na	50,000	*nd*	*nd*	*nd*	*nd*	*ns/1*	<2	*ns*	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	<2.0	*ns*	<2.0	<2.0	<2.0	<2.0
1,4-Dioxane (µg/L)																								
1,4-Dioxane	3	na	na	<2	<5	<2	<2	*ns/1*	<2.0	*ns*	<2.0	**0.41**	<2	<2	R	<2	<2.0	<2.0	<2.0	*ns*	<2.0	<2.0	**0.67**	**0.72**
Contaminant of Concern																								
Cyanide (mg/L)	0.2	0.2	na	<0.010	**0.0209**	<0.010	<0.010	*ns/1*	<0.010	*ns*	<0.010	<0.010	<0.010	**0.0385**	<0.010	<0.010	<0.01	<0.010	<0.010	*ns*	<0.010	<0.010	<0.010	<0.010
Metals of Concern (mg/L)																								
Arsenic	0.01	0.05	na	<0.0071	<0.010	<0.010	<0.001	*ns/1*	<0.001	*ns*	<0.001	<0.001	<0.0061	**0.0078J**	<0.010	**0.0048**	**0.0046**	**0.0061**	**0.0059**	*ns*	**0.0051**	**0.0051**	**0.0049**	**0.0050**
Cadmium	0.005	0.005	na	<0.005	<0.005	<0.0004	<0.002	*ns/1*	<0.002	*ns*	<0.001	<0.001	**0.0025J**	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	*ns*	<0.001	<0.001	<0.001	<0.001
Chromium	0.1	0.10	na	**0.0044J**	<0.010	**0.003**	<0.005	*ns/1*	<0.005	*ns*	**0.0089**	<0.005	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	*ns*	<0.005	<0.005	<0.005	<0.005
Lead	0.015	0.015	na	<0.010	<0.010	<0.010	<0.001	*ns/1*	<0.001	*ns*	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001	<0.001	<0.001
Manganese	0.84	na	na	<0.015	<0.0026	**0.0196**	**0.005**	*ns/1*	<0.005	*ns*	<0.010	<0.010	**0.456**	**0.416**	**0.402**	**0.3563**	**0.2118**	**0.3746**	**0.3641**	*ns*	**0.366**	**0.370**	**0.320**	**0.321**
Nickel	0.10	0.10	na	**0.0463**	**0.0853**	**0.31**	**0.0805**	*ns/1*	**0.0465**	*ns*	**0.0212**	**0.0155**	<0.040	<0.040	<0.040	<0.005	<0.005	<0.005	<0.005	*ns*	<0.005	<0.005	<0.005	<0.005
NA - Laboratory																								
Methane (µg/L)	na	na	na	---	---	---	**0.16**	*ns/1*	*ns*	*ns*	*ns*	**0.24**	---	---	---	**2.20**	**8.5**	*ns*	*ns*	*ns*	*ns*	*ns*	**6.5**	*ns*
Alkalinity (mg/L)	na	na	na	---	---	---	**46**	*ns/1*	*ns*	*ns*	*ns*	**44**	---	---	---	**43**	**35**	*ns*	*ns*	*ns*	*ns*	*ns*	**46**	*ns*
Chloride (mg/L)	na	na	na	---	---	---	**38**	*ns/1*	*ns*	*ns*	*ns*	**18**	---	---	---	**81**	**74**	*ns*	*ns*	*ns*	*ns*	*ns*	**73**	*ns*
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	<0.05	*ns/1*	*ns*	*ns*	*ns*	<0.050	---	---	---	<0.05	<0.05	*ns*	*ns*	*ns*	*ns*	*ns*	<0.050	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	**1.5**	*ns/1*	*ns*	*ns*	*ns*	**0.91**	---	---	---	<0.05	**0.07**	*ns*	*ns*	*ns*	*ns*	*ns*	<0.050	*ns*
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	**1.5**	*ns/1*	*ns*	*ns*	*ns*	**0.91**	---	---	---	<0.05	**0.057**	*ns*	*ns*	*ns*	*ns*	*ns*	<0.050	*ns*
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	**8.5**	*ns/1*	*ns*	*ns*	*ns*	**12**	---	---	---	**28**	**29**	*ns*	*ns*	*ns*	*ns*	*ns*	**26**	*ns*
Total Organic Carbon (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	**0.80**	---	---	---	*ns*	<0.5	*ns*	*ns*	*ns*	*ns*	*ns*	<0.50	*ns*
Carbon Dioxide (mg/L)	na	na	na	---	---	---	**89**	*ns/1*	*ns*	*ns*	*ns*	**62**	---	---	---	**24**	**17.00**	*ns*	*ns*	*ns*	*ns*	*ns*	**17**	*ns*
Total Suspended Solids (mg/L)	na	na	na	---	---	---	**1.3J**	*ns/1*	*ns*	*ns*	*ns*	<2.5	---	---	---	**7.5J**	**22.0**	*ns*	*ns*	*ns*	*ns*	*ns*	**11**	*ns*
NA - Field Screening																								
pH (SU)	na	na	na	---	---	---	**2.92**	*ns/1*	**5.7**	*ns*	*ns/g*	*ns/g*	---	---	---	**6.34**	**6.8**	**6.3**	*ns*	*ns*	**6.3**	*ns*	**5.8**	*ns*
ORP (mV)	na	na	na	---	---	---	**630.1**	*ns/1*	**124**	*ns*	*ns/g*	*ns/g*	---	---	---	**-70.8**	**-51**	**-55**	*ns*	*ns*	**-48**	*ns*	**-27**	*ns*
Specific Conductance (µS/cm)	na	na	na	---	---	---	**226**	*ns/1*	**988**	*ns*	*ns/g*	*ns/g*	---	---	---	**438**	**370**	**431**	*ns*	*ns*	**417**	*ns*	**406**	*ns*
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	**4.00**	*ns/1*	**3.9**	*ns*	*ns/g*	*ns/g*	---	---	---	**0.77**	**0.9**	<0.5	*ns*	*ns*	**0.7**	*ns*	<0.5	*ns*
Turbidity (ntu)	na	na	na	---	---	---	**0.95**	*ns/1*	<5	*ns*	*ns/g*	*ns/g*	---	---	---	**0.72**	**18**	**10**	*ns*	*ns*	<5	*ns*	**5**	*ns*
Temperature (°C)	na	na	na	---	---	---	**13.60**	*ns/1*	**12**	*ns*	*ns/g*	*ns/g*	---	---	---	**14.85**	**15**	**12**	*ns*	*ns*	**16**	*ns*	**15**	*ns*

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date	NH AGQS	ROD ICL	GW-2	NHP_MW-204R Bedrock										NHP_MW-301S Shallow Overburden									
				Jun-07	Nov-07	Apr-08	Aug-09	Oct-10	Oct-11	Nov-12	Nov-12 DUP	Aug-13	Jul-14	May-07	Oct-07	Apr-08	Aug-09	Oct-10	Nov-11	Jul-12	Jul-12 Dup	Aug-13	Jul-14
VOCs of Concern (µg/L)																							
Chloroform	70	100	70	<5	<5	<5	<2	<2.0	<2.0	ns	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	<2	<2.0	<2.0	ns	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<5	<5	<5	<2	<2.0	<2.0	ns	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<2	<2.0	<2.0	ns	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	**1.3 J**	<5	**1.4 J**	<2	<2.0	<2.0	ns	ns	<2.0	<2.0	**0.61 J**	**3.6 J**	**0.98 J**	**2.2**	**3.0**	<2.0	<1.0	<1.0	<2.0	<2.0
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<2	<2.0	<2.0	ns	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0
Vinyl Chloride	2	2	4	nd	nd	nd	nd	nd	<2.0	ns	ns	<2.0	<2.0	nd	nd	nd	nd	nd	<2.0	<1.0	<1.0	<2.0	<2.0
Additional VOCs (µg/L)																							
Acetone	6,000	na	na	<10	<10	<10	<10	<10	<10	ns	ns	<10	<10	<10	<10	<10	<10	<10	<10	<1.0	<1.0	<10	<10
Benzene	5	na	2,900	<5	<5	<5	<2	<2.0	<2.0	ns	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	<5	<5	<2	<2.0	<2.0	ns	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0
Chloromethane	30	na	na	<5	<5	<5	<2	<2.0	<2.0	ns	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<2	<2.0	<2.0	ns	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	<5	<5	<5	<2	<2.0	<2.0	ns	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0
Toluene	1,000	na	50,000	nd	nd	nd	nd	nd	<2.0	ns	ns	<2.0	<2.0	nd	nd	nd	nd	nd	<2.0	<1.0	<1.0	<2.0	<2.0
1,4-Dioxane (µg/L)																							
1,4-Dioxane	3	na	na	<2	<2	R	<2	<2.0	<2.0	ns	ns	<2.0	<0.20	<2	R	<2	<2	<2.0	<2.0	ns	ns	<2.0	<0.20
Contaminant of Concern																							
Cyanide (mg/L)	0.2	0.2	na	<0.010	**0.0291**	<0.010	<0.010	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<0.01	ns	ns	**0.012**	<0.010
Metals of Concern (mg/L)																							
Arsenic	0.01	0.05	na	<0.004	<0.010	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0047	<0.010	<0.010	<0.001	<0.001	<0.001	ns	ns	<0.001	<0.001
Cadmium	0.005	0.005	na	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	**0.0025J**	**0.0354**	<0.005	**0.0045**	**0.0303**	**0.0023**	ns	ns	**0.0048**	**0.0206**
Chromium	0.1	0.10	na	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	<0.0022	<0.010	<0.005	<0.005	<0.005	ns	ns	<0.005	<0.005
Lead	0.015	0.015	na	<0.010	**<3.6**	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	ns	ns	<0.001	<0.001
Manganese	0.84	na	na	**0.361**	**0.305**	**0.363**	**0.2836**	**0.2933**	**0.2872**	**0.266**	**0.268**	**0.280**	**0.244**	**0.0492**	**0.1910**	**0.0023J**	<0.005	**0.0394**	<0.005	ns	ns	<0.010	<0.010
Nickel	0.10	0.10	na	<0.040	<0.040	**0.0024J**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0211J**	**0.0733**	**0.0241J**	**0.0524**	**0.0823**	**0.0247**	ns	ns	**0.0222**	**0.0425**
NA - Laboratory																							
Methane (µg/L)	na	na	na	---	---	---	ns	ns	ns	ns	ns	ns	ns	---	---	---	**0.35**	**0.500**	ns	ns	ns	ns	ns
Alkalinity (mg/L)	na	na	na	---	---	---	ns	ns	ns	**52.4**	ns	ns	ns	---	---	---	**55**	**51**	ns	ns	ns	ns	ns
Chloride (mg/L)	na	na	na	---	---	---	ns	ns	ns	**92**	ns	ns	ns	---	---	---	**70**	**91**	ns	ns	ns	ns	ns
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	ns	ns	ns	ns	ns	ns	ns	---	---	---	<0.05	<0.05	ns	ns	ns	ns	ns
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	ns	ns	ns	ns	ns	ns	ns	---	---	---	**4.4**	**4.0**	ns	ns	ns	ns	ns
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	ns	ns	ns	ns	ns	ns	ns	---	---	---	**4.4**	**4.0**	ns	ns	ns	ns	ns
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	ns	ns	ns	**23**	ns	ns	ns	---	---	---	**18**	**18**	ns	ns	ns	ns	ns
Total Organic Carbon (mg/L)	na	na	na	---	---	---	ns	ns	ns	<0.500	ns	ns	ns	---	---	---	ns	**0.53**	ns	ns	ns	ns	ns
Carbon Dioxide (mg/L)	na	na	na	---	---	---	ns	ns	ns	ns	ns	ns	ns	---	---	---	**92**	**100**	ns	ns	ns	ns	ns
Total Suspended Solids (mg/L)	na	na	na	---	---	---	ns	ns	ns	ns	ns	ns	ns	---	---	---	<1.3	<10	ns	ns	ns	ns	ns
NA - Field Screening																							
pH (SU)	na	na	na	---	---	---	**5.80**	**6.9**	**6.4**	**6.8**	ns	**7**	**3.6**	---	---	---	**4.70**	**6.1**	**6.0**	**5.8**	ns	**5.8**	**6.1**
ORP (mV)	na	na	na	---	---	---	**-26.9**	**-72**	**-48**	**-52**	ns	**-34**	**28**	---	---	---	**624.0**	**103 J***	**140**	**256**	ns	**371**	**159**
Specific Conductance (µS/cm)	na	na	na	---	---	---	**488**	**410**	**488**	**468**	ns	**481**	**475**	---	---	---	**391**	**500**	**537**	**404**	ns	**484**	**462**
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	**0.66**	<0.5	**0.5**	<0.5	ns	<0.5	**0.5**	---	---	---	**4.25**	**2.6**	**7.6**	**2.9**	ns	**7.7**	**6.1**
Turbidity (ntu)	na	na	na	---	---	---	**0.62**	**21**	**10**	<5	ns	<5	<5	---	---	---	**1.98**	<5	<5	**1**	ns	<5	<5
Temperature (°C)	na	na	na	---	---	---	**15.79**	**13**	**12**	**10**	ns	**15**	**17**	---	---	---	**15.91**	**13**	**12**	**15**	ns	**14**	**13**

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date	NH AGQS	ROD ICL	GW-2	NHP_MW-301D Deep Overburden									MW-301 [1] Shallow Overburden				
				May-07	Oct-07	Apr-08	Aug-09	Oct-10	Nov-11	Nov-12	Aug-13	Jul-14	Nov-09	Nov-10	Nov-11	Nov-12	Nov-13
VOCs of Concern (µg/L)																	
Chloroform	70	100	70	**0.82J**	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	---	<2	<2	<2	<2
1,1-Dichloroethene	7	7	630	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<2	<1	<1	**3**	<1
Cis-1,2-Dichoroethene	70	70	na	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<2	<2	<2	**8**	<2
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<2	<2	<2	<2	<2
Trichloroethene (TCE)	5	5	20	**28**	**16**	**29**	**3.1**	**5.6**	**4.2**	*ns*	**3.5**	**4.3**	**26**	**28**	**12**	**30**	**32**
Tetrachloroethene (PCE)	5	5	240	**0.63J**	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	---	<2	<2	<2	<2
Vinyl Chloride	2	2	4	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	*ns*	<2.0	<2.0	*nd*	*nd*	<2	<2	<2
Additional VOCs (µg/L)																	
Acetone	6,000	na	na	<10	<10	<10	<10	<10	<10	*ns*	<10	<10	---	<10	<10	<10	<10
Benzene	5	na	2,900	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<1	<1	<1	<1	<1
Carbon Disulfide	70	na	na	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	---	<5	<5	<5	<5
Chloromethane	30	na	na	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	---	<2	<2	<2	<2
1,1-Dichloroethane	81	na	130	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<2	<2	**2**	**15**	**2**
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	**1.6J**	<5	**1.1J**	<2	<2.0	<2.0	*ns*	<2.0	<2.0	---	<5	<5	<5	<5
Toluene	1,000	na	50,000	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	*ns*	<2.0	<2.0	*nd*	*nd*	<1	<1	<1
1,4-Dioxane (µg/L)																	
1,4-Dioxane	3	na	na	<2	R	<2	<2	<2.0	<2.0	*ns*	<2.0	**0.26**	---	*ns*	*ns*	*ns*	*ns*
Contaminant of Concern																	
Cyanide (mg/L)	0.2	0.2	na	<0.010	**0.0129J**	<0.010	<0.010	<0.01	<0.01	*ns*	<0.010	<0.010	---	*ns*	*ns*	*ns*	*ns*
Metals of Concern (mg/L)																	
Arsenic	0.01	0.05	na	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001	---	*ns*	*ns*	*ns*	*ns*
Cadmium	0.005	0.005	na	<0.005	<0.00076	<0.005	<0.002	<0.002	<0.002	*ns*	<0.001	<0.001	---	*ns*	*ns*	*ns*	*ns*
Chromium	0.1	0.10	na	<0.010	<0.0031	**0.00049J**	<0.005	<0.005	<0.005	*ns*	**0.0079**	**0.0052**	---	*ns*	*ns*	*ns*	*ns*
Lead	0.015	0.015	na	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001	---	*ns*	*ns*	*ns*	*ns*
Manganese	0.84	na	na	**0.361**	**0.0673**	**0.268**	**0.0777**	**0.4324**	**0.0754**	*ns*	<0.010	<0.010	---	*ns*	*ns*	*ns*	*ns*
Nickel	0.10	0.10	na	**0.0447**	**0.0129J**	**0.0328J**	**0.0284**	**0.0555**	**0.0308**	*ns*	**0.0308**	**0.0258**	---	*ns*	*ns*	*ns*	*ns*
NA - Laboratory																	
Methane (µg/L)	na	na	na	---	---	---	**0.94**	**0.770**	*ns*	*ns*	*ns*	**0.38**	---	*ns*	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na	na	---	---	---	**17**	**17**	*ns*	*ns*	*ns*	**18**	---	*ns*	*ns*	*ns*	*ns*
Chloride (mg/L)	na	na	na	---	---	---	**150**	**140**	*ns*	*ns*	*ns*	**160**	---	*ns*	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	<0.05	<0.05	*ns*	*ns*	*ns*	<0.050	---	*ns*	*ns*	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	**1.5**	**1.5**	*ns*	*ns*	*ns*	**1.6**	---	*ns*	*ns*	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	**1.5**	**1.4**	*ns*	*ns*	*ns*	**1.6**	---	*ns*	*ns*	*ns*	*ns*
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	**20**	**18**	*ns*	*ns*	*ns*	**29**	---	*ns*	*ns*	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na	na	---	---	---	*ns*	<0.50	*ns*	*ns*	*ns*	**0.57**	---	*ns*	*ns*	*ns*	*ns*
Carbon Dioxide (mg/L)	na	na	na	---	---	---	**28**	**30**	*ns*	*ns*	*ns*	**26**	---	*ns*	*ns*	*ns*	*ns*
Total Suspended Solids (mg/L)	na	na	na	---	---	---	<1.3	<10	*ns*	*ns*	*ns*	<2.5	---	*ns*	*ns*	*ns*	*ns*
NA - Field Screening																	
pH (SU)	na	na	na	---	---	---	**5.71**	**6.1**	**5.9**	*ns*	**5.8**	**6.0**	---	**6.03**	**6.31**	**5.88**	**5.73**
ORP (mV)	na	na	na	---	---	---	**166.1**	**91**	**170**	*ns*	**314**	**219**	---	**156**	**122**	**226**	**46.6**
Specific Conductance (µS/cm)	na	na	na	---	---	---	**596**	**583 J***	**564**	*ns*	**679**	**664**	---	*ns*	**339**	**544**	**360**
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	**10.35**	**7.3**	**6.7**	*ns*	**8.6**	**7.7**	---	**1.79**	**1.60**	**0.93**	**1.09**
Turbidity (ntu)	na	na	na	---	---	---	**1.29**	**8**	<5	*ns*	<5	<5	---	**2.7**	**1.4**	**3.3**	*ns*
Temperature (°C)	na	na	na	---	---	---	**15.35**	**13**	**12**	*ns*	**13**	**14**	---	**12.07**	**12.65**	**12.78**	**11.06**

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen	NH AGQS	ROD ICL	GW-2	NHP_MW-302S Shallow Overburden									NHP_MW-302D Deep Overburden								
Sampling Event Date				**May-07**	**Oct-07**	**Apr-08**	**Aug-09**	**Oct-10**	**Oct-11**	**Jul-12**	**Aug-13**	**Jul-14**	**May-07**	**Oct-07**	**Apr-08**	**Aug-09**	**Oct-10**	**Oct-11**	**Nov-12**	**Aug-13**	**Jul-14**
VOCs of Concern (µg/L)																					
Chloroform	70	100	70	<5	<5	<5	<2	<2.0	<2.0	<1.0	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	**2.6J**	<5	<2	**2.4**	<2.0	**1.8**	**4.2**	**5.8 J**	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<5	**3.1J**	<5	<2	**3.2**	<2.0	**1.4**	**4.2**	**5.2 J**	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<2	<2.0	<2.0	<1.0	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	**5.1**	**82**	**3.8**	**18**	**48**	**28**	**33**	**123**	**119**	**4.9J**	**3.6J**	**1.8J**	**2**	<2.0	<2.0	*ns*	<2.0	<2.0
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<2	<2.0	<2.0	<1.0	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Vinyl Chloride	2	2	4	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	<1.0	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	*ns*	<2.0	<2.0
Additional VOCs (µg/L)																					
Acetone	6,000	na	na	<10	<10	<10	<10	<10	<10	<1.0	<10	<10	<10	<10	<10	<10	<10	<10	*ns*	<10	<10
Benzene	5	na	2,900	<5	<5	<5	<2	<2.0	<2.0	<1.0	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	<5	<5	<2	<2.0	<2.0	<1.0	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Chloromethane	30	na	na	<5	<5	<5	<2	<2.0	<2.0	<1.0	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	**2.7**	**11**	**5**	**9.3**	**20**	**28**	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	<5	<5	<5	<2	<2.0	<2.0	<1.0	<2.0	<2.0	**4.9J**	**3.3J**	**2.6J**	**2.1**	<2.0	**2.8**	*ns*	**2**	**2.1**
Toluene	1,000	na	50,000	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	<1.0	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	*ns*	<2.0	<2.0
1,4-Dioxane (µg/L)																					
1,4-Dioxane	3	na	na	<2	<2	**2**	<2	<2.0	<2.0	*ns*	<2.0	**1.84**	<2	<2	R	<2	<2.0	<2.0	*ns*	<2.0	<0.20
Contaminant of Concern																					
Cyanide (mg/L)	0.2	0.2	na	<0.0042	**0.147J**	<0.010	<0.010	<0.01	<0.01	*ns*	<0.010	<0.010	<0.0106	**0.0109J**	<0.010	<0.010	<0.01	<0.010	*ns*	<0.010	<0.010
Metals of Concern (mg/L)																					
Arsenic	0.01	0.05	na	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001
Cadmium	0.005	0.005	na	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	*ns*	<0.001	<0.001	**0.0045J**	<0.005	<0.005	<0.002	<0.002	<0.002	*ns*	<0.001	<0.001
Chromium	0.1	0.10	na	**0.0073J**	<0.010	<0.010	<0.005	<0.005	<0.005	*ns*	<0.005	<0.005	<0.010	**0.0028J**	<0.010	<0.005	<0.005	<0.005	*ns*	<0.005	<0.005
Lead	0.015	0.015	na	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001
Manganese	0.84	na	na	**0.133**	**0.26**	**0.0361**	**0.0359**	**0.8295**	**0.0833**	*ns*	**0.609**	**0.114**	**0.156**	**0.174**	**0.19**	**0.1781**	**0.1956**	**0.2516**	*ns*	**0.069**	**0.034**
Nickel	0.10	0.10	na	<0.040	**0.102J**	**0.0054J**	<0.005	**0.0313**	<0.005	*ns*	**0.0056**	<0.005	<0.040	<0.040	**0.0034J**	<0.005	<0.005	<0.005	*ns*	<0.005	<0.005
NA - Laboratory																					
Methane (µg/L)	na	na	na	---	---	---	**97.00**	**1,800**	*ns*	*ns*	*ns*	**290**	---	---	---	**5.80**	**1.4**	*ns*	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na	na	---	---	---	**56**	**100**	*ns*	*ns*	*ns*	**69**	---	---	---	**64**	**59**	*ns*	*ns*	*ns*	*ns*
Chloride (mg/L)	na	na	na	---	---	---	**18**	**34**	*ns*	*ns*	*ns*	**33**	---	---	---	**46**	**43**	*ns*	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	<0.05	<0.05	*ns*	*ns*	*ns*	<0.050	---	---	---	<0.05	<0.05	*ns*	*ns*	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	**3.5**	**4.5**	*ns*	*ns*	*ns*	**0.39**	---	---	---	**1.2**	**1.0**	*ns*	*ns*	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	**3.5**	**4.4**	*ns*	*ns*	*ns*	**0.39**	---	---	---	**1.2**	**1.0**	*ns*	*ns*	*ns*	*ns*
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	**35**	**68**	*ns*	*ns*	*ns*	**31**	---	---	---	**12**	**15**	*ns*	*ns*	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na	na	---	---	---	*ns*	**1.50**	*ns*	*ns*	*ns*	**0.55**	---	---	---	*ns*	**0.57**	*ns*	*ns*	*ns*	*ns*
Carbon Dioxide (mg/L)	na	na	na	---	---	---	**110**	**150**	*ns*	*ns*	*ns*	**67**	---	---	---	**46**	**39.0**	*ns*	*ns*	*ns*	*ns*
Total Suspended Solids (mg/L)	na	na	na	---	---	---	**1.3J**	<2.5	*ns*	*ns*	*ns*	<2.5	---	---	---	**4.5J**	**3.0**	*ns*	*ns*	*ns*	*ns*
NA - Field Screening																					
pH (SU)	na	na	na	---	---	---	**2.57**	**6.2**	*ns/g*	**5.8**	*ns/g*	*ns/g*	---	---	---	**5.12**	**6.7**	**6.7**	*ns*	**6.3**	**6.7**
ORP (mV)	na	na	na	---	---	---	**634.6**	**129**	*ns/g*	**229**	*ns/g*	*ns/g*	---	---	---	**485.6**	**108**	**117**	*ns*	**232**	**84**
Specific Conductance (µS/cm)	na	na	na	---	---	---	**275**	**447**	*ns/g*	**395**	*ns/g*	*ns/g*	---	---	---	**315**	**306**	**314**	*ns*	**329**	**364**
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	**7.70**	**1.5**	*ns/g*	**3.6**	*ns/g*	*ns/g*	---	---	---	**-3.12R [2]**	**0.6**	**3**	*ns*	**0.8**	**5.8**
Turbidity (ntu)	na	na	na	---	---	---	**1.88**	<5	*ns/g*	**1**	*ns/g*	*ns/g*	---	---	---	**7.90**	**6**	**7**	*ns*	<5	<5
Temperature (°C)	na	na	na	---	---	---	**15.26**	**12**	*ns/g*	**15**	*ns/g*	*ns/g*	---	---	---	**13.75**	**12**	**11**	*ns*	**13**	**12**

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date	NH AGQS	ROD ICL	GW-2	MW-302 [1] Shallow Overburden					NHP_MW-303S Shallow Overburden									
				Nov-09	Nov-10	Nov-11	Nov-12	Nov-13	May-07	Oct-07	Oct-07 DUP	Apr-08	Aug-09	Oct-10	Oct-11	Nov-12	Aug-13	Jul-14
VOCs of Concern (µg/L)																		
Chloroform	70	100	70	---	<2	<2	<2	<2	<5	<5	<5	<10	<2	<2.0	<2.0	ns	<2.0	<2.0
1,1-Dichloroethene	7	7	630	**6**	**1**	**3**	**2**	<1	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	**9**	**4**	**33**	**4**	**12**	<5	<5	<5	**2.9J**	<2	**6.3**	**17**	ns	**55**	**44 J**
1,1,1-Trichloroethane	200	200	27,000	<2	<2	<2	<2	<2	<5	**0.9J**	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	**21**	**20**	**32**	**21**	**21**	**2.2J**	**4.5J**	**4.8J**	**11J**	**3.1**	**6.7**	**13**	ns	**12**	**3.8**
Tetrachloroethene (PCE)	5	5	240	---	<2	<2	<2	<2	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Vinyl Chloride	2	2	4	nd	nd	<2	<2	<2	nd	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0
Additional VOCs (µg/L)																		
Acetone	6,000	na	na	---	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ns	<10	<10
Benzene	5	na	2,900	**1**	<1	**2**	<1	<1	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Carbon Disulfide	70	na	na	---	<5	<5	<5	<5	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Chloromethane	30	na	na	---	<2	<2	<2	<2	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<2	**10**	**21**	**13**	**7**	<5	<5	<5	<5	<2	**5.0**	**19**	ns	**21**	**16 J**
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	---	<5	<5	<5	<5	**7.1J**	**4.3J**	**4.5J**	**1.8J**	<2	<2.0	<2.0	ns	<2.0	<2.0
Toluene	1,000	na	50,000	nd	nd	<1	<1	<1	nd	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0
1,4-Dioxane (µg/L)																		
1,4-Dioxane	3	na	na	---	ns	ns	ns	ns	<2	<2	**2.4**	<2	<2	<2.0	<2.0	ns	<2.0	<0.20
Contaminant of Concern																		
Cyanide (mg/L)	0.2	0.2	na	---	ns	ns	ns	ns	<0.0052	**0.0315J**	**0.0338J**	<0.010	<0.010	<0.01	<0.010	ns	**0.013**	<0.010
Metals of Concern (mg/L)																		
Arsenic	0.01	0.05	na	---	ns	ns	ns	ns	<0.010	<0.010	<0.010	<0.010	<0.001	**0.0013**	**0.004**	ns	**0.0026**	**0.0012**
Cadmium	0.005	0.005	na	---	ns	ns	ns	ns	**1.11**	**1.03**	**1.03**	**0.721**	**1.44**	**0.5578**	**0.5195**	ns	**0.2046**	**1.05**
Chromium	0.1	0.10	na	---	ns	ns	ns	ns	<0.010	**0.0058J**	<0.010	<0.010	<0.005	<0.005	<0.005	ns	<0.005	<0.005
Lead	0.015	0.015	na	---	ns	ns	ns	ns	<0.010	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	ns	<0.001	<0.001
Manganese	0.84	na	na	---	ns	ns	ns	ns	**0.544**	**0.432**	**0.433**	**0.428**	**0.6594**	**0.525**	**0.4114**	ns	**0.136**	**0.3494**
Nickel	0.10	0.10	na	---	ns	ns	ns	ns	**0.519**	**0.452**	**0.45**	**0.432**	**0.596**	**0.309**	**0.2703**	ns	**0.1598**	**0.3383**
NA - Laboratory																		
Methane (µg/L)	na	na	na	---	ns	ns	ns	ns	---	---	---	---	**47.00**	**38**	ns	ns	ns	**62**
Alkalinity (mg/L)	na	na	na	---	ns	ns	ns	ns	---	---	---	---	**56**	**66**	ns	ns	ns	**73**
Chloride (mg/L)	na	na	na	---	ns	ns	ns	ns	---	---	---	---	**180**	**54**	ns	ns	ns	**190**
Nitrite-Nitrogen (mg/L)	1	na	na	---	ns	ns	ns	ns	---	---	---	---	<0.05	<0.05	ns	ns	ns	<0.050
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	ns	ns	ns	ns	---	---	---	---	**1.2**	**0.44**	ns	ns	ns	**0.34**
Nitrate-Nitrogen (mg/L)	10	na	na	---	ns	ns	ns	ns	---	---	---	---	**1.2**	**0.44**	ns	ns	ns	**0.34**
Sulfate, as SO_4 (mg/L)	500	na	na	---	ns	ns	ns	ns	---	---	---	---	**24**	**26**	ns	ns	ns	**12**
Total Organic Carbon (mg/L)	na	na	na	---	ns	ns	ns	ns	---	---	---	---	ns	**1.3**	ns	ns	ns	**1.5**
Carbon Dioxide (mg/L)	na	na	na	---	ns	ns	ns	ns	---	---	---	---	**82**	**84**	ns	ns	ns	**56**
Total Suspended Solids (mg/L)	na	na	na	---	ns	ns	ns	ns	---	---	---	---	<1.3	<2.5	ns	ns	ns	<2.5
NA - Field Screening																		
pH (SU)	na	na	na	---	**6.39**	**7.08**	**5.22**	**4.92**	---	---	---	---	**5.50**	**6.3**	**6.3**	ns	**6**	**6.3**
ORP (mV)	na	na	na	---	**49**	**21**	**193**	**67.7**	---	---	---	---	**157.3**	**183**	**73**	ns	**80**	**70**
Specific Conductance (µS/cm)	na	na	na	---	ns	**277**	**336**	**174**	---	---	---	---	**575**	**376**	**399**	ns	**315**	**708**
Dissolved Oxygen (mg/L)	na	na	na	---	**0.09**	**0.24**	**0.98**	**0.26**	---	---	---	---	**0.77**	<0.5	**0.8**	ns	**1.3**	**1.0**
Turbidity (ntu)	na	na	na	---	**3.2**	**2.9**	**4.9**	ns	---	---	---	---	**1.39**	<5	<5	ns	<5	<5
Temperature (°C)	na	na	na	---	**12.50**	**12.12**	**12.75**	**11.23**	---	---	---	---	**16.14**	**12**	**13**	ns	**14**	**13**

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen	NH AGQS	ROD ICL	GW-2	NHP_MW-303D Deep Overburden										NHP_MW-304S Shallow Overburden								
Sampling Event Date				May-07	May-07 DUP	Oct-07	Apr-08	Aug-09	Oct-10	Oct-11	Nov-12	Aug-13	Jul-14	May-07	Oct-07	Apr-08	Aug-09	Oct-10	Oct-11	Nov-12	Aug-13	Jul-14
VOCs of Concern (µg/L)																						
Chloroform	70	100	70	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	**1.1J**	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	**4.4J**	**3.9J**	**4.5J**	**2.4J**	**3**	**3.3**	**2.3**	ns	**2.9**	**3.1 J**	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	**120**	**110**	**130**	**79**	**74**	**78**	**53**	ns	**74**	**63**	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Vinyl Chloride	2	2	4	nd	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0
Additional VOCs (µg/L)																						
Acetone	6,000	na	na	<10	<10	<10	<10	<10	<10	<10	ns	<10	<10	<10	---	---	<10	<10	<10	ns	<10	<10
Benzene	5	na	2,900	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0
Chloromethane	30	na	na	<5	<5.8	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	---	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	**0.9J**	**0.96J**	**1J**	**1.1J**	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0
Toluene	1,000	na	50,000	nd	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0
1,4-Dioxane (µg/L)																						
1,4-Dioxane	3	na	na	**7.1**	**7.2**	**8.3**	<2	**6**	<2.0	**2.9**	ns	**2.84**	**2.52**	---	---	---	<2	**4.3**	<2.0	ns	<2.0	<0.20
Contaminant of Concern																						
Cyanide (mg/L)	0.2	0.2	na	<0.0056	<0.0042	<0.0042	<0.010	<0.010	<0.01	<0.010	ns	<0.010	<0.010	<0.007	**0.05**	<0.010	**0.04**	**0.062**	**0.052**	ns	**0.064**	**0.018**
Metals of Concern (mg/L)																						
Arsenic	0.01	0.05	na	<0.010	<0.010	<0.010	<0.010	**0.0087**	**0.0081**	**0.0106**	ns	**0.0091**	**0.0057**	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	ns	<0.001	<0.001
Cadmium	0.005	0.005	na	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	ns	<0.001	<0.001	**0.052**	**0.0463**	**0.0228**	**0.0103**	**0.0109**	<0.002	ns	**0.0023**	**0.0023**
Chromium	0.1	0.10	na	<0.010	<0.010	**0.0021J**	<0.010	<0.005	<0.005	<0.005	ns	<0.005	<0.005	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	ns	<0.005	**0.0118**
Lead	0.015	0.015	na	<0.010	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	ns	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	ns	<0.001	<0.001
Manganese	0.84	na	na	**0.293**	**0.301**	**0.366**	**0.26**	**0.1076**	**0.1221**	**0.1086**	ns	**0.124**	**0.116**	**0.847**	**1.53**	**1.07**	**1.25**	**0.79**	**0.0985**	ns	**0.064**	**0.021**
Nickel	0.10	0.10	na	<0.040	<0.040	**0.0081J**	**0.007J**	**0.0074**	**0.0067**	**0.0066**	ns	**0.0059**	<0.005	**0.198**	**0.279**	**0.196**	**0.1884**	**0.113**	**0.0309**	ns	**0.0409**	**0.0311**
NA - Laboratory																						
Methane (µg/L)	na	na	na	---	---	---	---	**25.00**	**51**	ns	ns	ns	**72**	---	---	---	**170.00**	**1.70**	ns	ns	ns	ns
Alkalinity (mg/L)	na	na	na	---	---	---	---	**89**	**87**	ns	ns	ns	**110**	---	---	---	**130**	**160**	ns	ns	ns	ns
Chloride (mg/L)	na	na	na	---	---	---	---	**47**	**48**	ns	ns	ns	**39**	---	---	---	**7.8**	**3.9**	ns	ns	ns	ns
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	---	<0.05	<0.05	ns	ns	ns	<0.050	---	---	---	<0.05	<0.05	ns	ns	ns	ns
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	---	**0.37**	**0.1**	ns	ns	ns	<0.050	---	---	---	**0.12**	**0.49**	ns	ns	ns	ns
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	---	**0.35**	**0.099**	ns	ns	ns	<0.050	---	---	---	**0.11**	**0.49**	ns	ns	ns	ns
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	---	**35**	**43**	ns	ns	ns	**27**	---	---	---	**44**	**72**	ns	ns	ns	ns
Total Organic Carbon (mg/L)	na	na	na	---	---	---	---	ns	**1.1**	ns	ns	ns	**1.1**	---	---	---	ns	**2.40**	ns	ns	ns	ns
Carbon Dioxide (mg/L)	na	na	na	---	---	---	---	**39**	**36**	ns	ns	ns	**34**	---	---	---	**160**	**180.00**	ns	ns	ns	ns
Total Suspended Solids (mg/L)	na	na	na	---	---	---	---	**5.2**	**4.50**	ns	ns	ns	<2.5	---	---	---	<1.3	<2.5	ns	ns	ns	ns
NA - Field Screening																						
pH (SU)	na	na	na	---	---	---	---	**2.35**	**6.8**	**6.7**	ns	**6.4**	ns/t	---	---	---	**3.66**	**6.3**	**6.2**	ns	**5.8**	**6.3**
ORP (mV)	na	na	na	---	---	---	---	**473.5**	**-29**	**-1**	ns	**-43**	ns/t	---	---	---	**575.8**	**142**	**168**	ns	**271**	**139**
Specific Conductance (µS/cm)	na	na	na	---	---	---	---	**433**	**449**	**396**	ns	**423**	ns/t	---	---	---	**331**	**447**	**327**	ns	**405**	**250**
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	---	**0.10**	**0.5**	**0.6**	ns	**0.7**	ns/t	---	---	---	**0.46**	**0.7**	**5.1**	ns	**3.4**	**7.7**
Turbidity (ntu)	na	na	na	---	---	---	---	**24.70**	**11**	**25**	ns	**14**	ns/t	---	---	---	**0.78**	<5	<5	ns	<5	<5
Temperature (°C)	na	na	na	---	---	---	---	**16.02**	**12**	**12**	ns	**14**	ns/t	---	---	---	**12.29**	**11**	**9**	ns	**11**	**11**

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen	NH AGQS	ROD ICL	GW-2	NHP_MW-304D Deep Overburden									NHP_MW-305S Shallow Overburden								
Sampling Event Date				**May-07**	**Oct-07**	**Apr-08**	**Aug-09**	**Oct-10**	**Oct-11**	**Nov-12**	**Aug-13**	**Jul-14**	**May-07**	**Oct-07**	**Apr-08**	**Aug-09**	**Oct-10**	**Oct-11**	**Nov-12**	**Aug-13**	**Jul-14**
VOCs of Concern (µg/L)																					
Chloroform	70	100	70	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	**3.1J**	**3.2J**	<5	**3.3**	**3.6**	**4.5**	ns	**4**	**3.7**	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	**36**	**35**	**26**	**40**	**36**	**38**	ns	**39**	**37**	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Vinyl Chloride	2	2	4	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0
Additional VOCs (µg/L)																					
Acetone	6,000	na	na	<10	---	---	<10	<10	<10	ns	<10	<10	<10	---	---	<10	<10	<10	ns	<10	<10
Benzene	5	na	2,900	<5	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0
Chloromethane	30	na	na	---	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0	---	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	**0.95J**	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0
Toluene	1,000	na	50,000	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0
1,4-Dioxane (µg/L)																					
1,4-Dioxane	3	na	na	---	---	**2.5**	<2	<2.0	**2.1**	ns	<2.0	**1.60**	---	---	---	<2	<2.0	<2.0	ns	<2.0	<0.20
Contaminant of Concern																					
Cyanide (mg/L)	0.2	0.2	na	<0.006	**0.057**	<0.010	<0.010	<0.01	<0.010	ns	<0.010	<0.010	<0.004	**0.0538**	<0.010	<0.010	<0.01	<0.010	ns	<0.010	<0.010
Metals of Concern (mg/L)																					
Arsenic	0.01	0.05	na	<0.010	**0.0062J**	<0.010	<0.001	<0.001	<0.001	ns	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	ns	<0.001	<0.001
Cadmium	0.005	0.005	na	<0.005	**0.0018J**	**0.0017J**	**0.0036**	<0.002	**0.0128**	ns	**0.0094**	**0.0124**	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	ns	<0.001	<0.001
Chromium	0.1	0.10	na	<0.010	**0.0012J**	<0.010	<0.005	<0.005	<0.005	ns	<0.005	<0.005	<0.010	**0.0014**	<0.010	<0.005	<0.005	<0.005	ns	<0.005	**0.0055**
Lead	0.015	0.015	na	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	ns	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	ns	<0.001	<0.001
Manganese	0.84	na	na	**1.1**	**1.38**	**1.38**	**0.5722**	**0.5208**	**0.7495**	ns	**0.515**	**0.414**	<0.010	**0.0452**	**0.0325**	**0.0059**	**0.0117**	**0.0055**	ns	<0.010	<0.010
Nickel	0.10	0.10	na	**0.275**	**0.503**	**0.514**	**0.1954**	**0.0679**	**0.1379**	ns	**0.1235**	**0.1087**	**0.018**	**0.0401**	**0.111**	**0.0355**	**0.0759**	**0.0628**	ns	**0.0407**	**0.0563**
NA - Laboratory																					
Methane (µg/L)	na	na	na	---	---	---	**300.00**	**250**	ns	ns	ns	**140**	---	---	---	**0.28**	**0.53**	ns	ns	ns	ns
Alkalinity (mg/L)	na	na	na	---	---	---	**110**	**120**	ns	ns	ns	**130**	---	---	---	**14**	**51**	ns	ns	ns	ns
Chloride (mg/L)	na	na	na	---	---	---	**31**	**30**	ns	ns	ns	**28**	---	---	---	**160**	**16**	ns	ns	ns	ns
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	<0.05	<0.05	ns	ns	ns	<0.050	---	---	---	<0.05	<0.05	ns	ns	ns	ns
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	<0.05	<0.05	ns	ns	ns	**0.13**	---	---	---	**3.5**	**1.7**	ns	ns	ns	ns
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	<0.05	<0.05	ns	ns	ns	**0.13**	---	---	---	**3.5**	**1.7**	ns	ns	ns	ns
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	**22**	**24**	ns	ns	ns	**21**	---	---	---	**13**	**19**	ns	ns	ns	ns
Total Organic Carbon (mg/L)	na	na	na	---	---	---	ns	**1.20**	ns	ns	ns	**1.3**	---	---	---	ns	**1.10**	ns	ns	ns	ns
Carbon Dioxide (mg/L)	na	na	na	---	---	---	**65**	**52**	ns	ns	ns	**52**	---	---	---	**59**	**180.00**	ns	ns	ns	ns
Total Suspended Solids (mg/L)	na	na	na	---	---	---	<1.3	<2.5	ns	ns	ns	<2.5	---	---	---	<1.3	<10	ns	ns	ns	ns
NA - Field Screening																					
pH (SU)	na	na	na	---	---	---	**6.38**	**6.9**	**6.6**	ns	**6.4**	**6.8**	---	---	---	**4.55**	**5.9**	**5.5**	ns	**5.3**	**5.7**
ORP (mV)	na	na	na	---	---	---	**20.6**	**107**	**106**	ns	**105**	**26**	---	---	---	**592.7**	**115**	**114**	ns	**272**	**255**
Specific Conductance (µS/cm)	na	na	na	---	---	---	**380**	**373**	**386**	ns	**400**	**407**	---	---	---	**607**	**201**	**137**	ns	**222**	**489**
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	**0.51**	**0.6**	**0.6**	ns	**0.6**	**0.5**	---	---	---	**8.45**	**3.7**	**4.6**	ns	**8.4**	**6.7**
Turbidity (ntu)	na	na	na	---	---	---	**0.44**	<5	<5	ns	<5	<5	---	---	---	**0.11**	<5	<5	ns	<5	<5
Temperature (°C)	na	na	na	---	---	---	**13.95**	**11**	**10**	ns	**11**	**13**	---	---	---	**13.08**	**13**	**12**	ns	**12**	**12**

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen	NH AGQS	ROD ICL	GW-2	NHP_MW-305D Deep Overburden									NHP_MW-306S Shallow Overburden								
Sampling Event Date				**May-07**	**Oct-07**	**Apr-08**	**Aug-09**	**Oct-10**	**Oct-11**	**Nov-12**	**Aug-13**	**Jul-14**	**May-07**	**Nov-07**	**Apr-08**	**Aug-09**	**Oct-10**	**Oct-11**	**Nov-12**	**Aug-13**	**Jul-14**
VOCs of Concern (µg/L)																					
Chloroform	70	100	70	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	**2.1J**	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	**15**	<5	**7.3**	**5.9**	<2.0	*ns*	<2.0	<2.0
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Vinyl Chloride	2	2	4	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	*ns*	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	*ns*	<2.0	<2.0
Additional VOCs (µg/L)																					
Acetone	6,000	na	na	<10	---	---	<10	<10	<10	*ns*	<10	<10	<10	---	---	<10	<10	**14**	*ns*	<10	<10
Benzene	5	na	2,900	<5	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Chloromethane	30	na	na	---	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0	---	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	<5	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Toluene	1,000	na	50,000	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	*ns*	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	*ns*	<2.0	<2.0
1,4-Dioxane (µg/L)																					
1,4-Dioxane	3	na	na	---	---	---	<2	<2.0	<2.0	*ns*	<2.0	<0.20	---	---	---	<2	<2.0	<2.0	*ns*	<2.0	<0.20
Contaminant of Concern																					
Cyanide (mg/L)	0.2	0.2	na	<0.005	**0.0252**	<0.010	<0.010	<0.01	<0.010	*ns*	<0.010	<0.010	<0.010	**0.0033J**	<0.010	<0.010	<0.01	<0.010	*ns*	<0.010	<0.010
Metals of Concern (mg/L)																					
Arsenic	0.01	0.05	na	**0.0048J**	**0.0067J**	<0.010	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001
Cadmium	0.005	0.005	na	**0.0038J**	<0.005	<0.005	<0.002	<0.002	<0.002	*ns*	<0.001	<0.001	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	*ns*	<0.001	<0.001
Chromium	0.1	0.10	na	<0.010	<0.010	<0.010	<0.005	<0.005	**0.0062**	*ns*	**0.0055**	**0.0076**	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	*ns*	<0.005	<0.005
Lead	0.015	0.015	na	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001
Manganese	0.84	na	na	**0.2**	**0.381**	**0.0493**	**0.0096**	**0.0218**	**0.0099**	*ns*	<0.010	<0.010	**0.0123J**	**0.0088J**	**0.0032J**	<0.005	**0.0187**	**0.0189**	*ns*	**0.013**	<0.005
Nickel	0.10	0.10	na	<0.040	**0.0097J**	**0.0015J**	<0.005	<0.005	<0.005	*ns*	<0.005	<0.005	<0.040	<0.040	<0.040	<0.005	<0.005	<0.005	*ns*	<0.005	<0.005
NA - Laboratory																					
Methane (µg/L)	na	na	na	---	---	---	**0.38**	**0.077**	*ns*	*ns*	*ns*	*ns*	---	---	---	**0.84**	**0.290**	*ns*	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na	na	---	---	---	**10**	**10**	*ns*	*ns*	*ns*	*ns*	---	---	---	**16**	**21**	*ns*	*ns*	*ns*	*ns*
Chloride (mg/L)	na	na	na	---	---	---	**160**	**160**	*ns*	*ns*	*ns*	*ns*	---	---	---	**69**	**70**	*ns*	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	<0.05	<0.05	*ns*	*ns*	*ns*	*ns*	---	---	---	<0.05	<0.05	*ns*	*ns*	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	**1.9**	**1.80**	*ns*	*ns*	*ns*	*ns*	---	---	---	**1**	**2.3**	*ns*	*ns*	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	**1.9**	**1.80**	*ns*	*ns*	*ns*	*ns*	---	---	---	**1**	**2.3**	*ns*	*ns*	*ns*	*ns*
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	**17**	**23**	*ns*	*ns*	*ns*	*ns*	---	---	---	**14**	**16**	*ns*	*ns*	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na	na	---	---	---	*ns*	<0.5	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	<0.5	*ns*	*ns*	*ns*	*ns*
Carbon Dioxide (mg/L)	na	na	na	---	---	---	**27**	**24.00**	*ns*	*ns*	*ns*	*ns*	---	---	---	**40**	**50**	*ns*	*ns*	*ns*	*ns*
Total Suspended Solids (mg/L)	na	na	na	---	---	---	<1.3	<5.0	*ns*	*ns*	*ns*	*ns*	---	---	---	<1.3	<10	*ns*	*ns*	*ns*	*ns*
NA - Field Screening																					
pH (SU)	na	na	na	---	---	---	**5.63**	**6.2**	**5.8**	*ns*	**5.5**	**5.9**	---	---	---	**1.66**	**6**	*ns/g*	*ns*	*ns/g*	*ns/g*
ORP (mV)	na	na	na	---	---	---	**186.3**	**143**	**118**	*ns*	**232**	**202**	---	---	---	**687.8**	**75**	*ns/g*	*ns*	*ns/g*	*ns/g*
Specific Conductance (µS/cm)	na	na	na	---	---	---	**597**	**558**	**682**	*ns*	**620**	**745**	---	---	---	**328**	**332**	*ns/g*	*ns*	*ns/g*	*ns/g*
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	**10.55**	**9**	**9.6**	*ns*	**10.7**	**8.9**	---	---	---	**0.83**	**1.5**	*ns/g*	*ns*	*ns/g*	*ns/g*
Turbidity (ntu)	na	na	na	---	---	---	**1.02**	<5	<5	*ns*	<5	<5	---	---	---	**0.27**	<5	*ns/g*	*ns*	*ns/g*	*ns/g*
Temperature (°C)	na	na	na	---	---	---	**13.76**	**12**	**12**	*ns*	**13**	**13**	---	---	---	**14.01**	**12**	*ns/g*	*ns*	*ns/g*	*ns/g*

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date	NH AGQS	ROD ICL	GW-2	NHP_MW-306D Deep Overburden										NHP_MW-307S Shallow Overburden								
				May-07	May-07 DUP	Oct-07	Apr-08	Aug-09	Oct-10	Oct-11	Nov-12	Aug-13	Jul-14	May-07	Oct-07	Apr-08	Aug-09	Oct-10	Oct-11	Jul-12	Aug-13	Jul-14
VOCs of Concern (µg/L)																						
Chloroform	70	100	70	<5	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<1.0	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<1.0	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<5	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<1.0	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<1.0	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	<5	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	<5	**5.8**	<2	**2.4**	**2.9**	<1.0	<2.0	<2.0
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<1.0	<2.0	<2.0
Vinyl Chloride	2	2	4	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	*ns*	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	<1.0	<2.0	<2.0
Additional VOCs (µg/L)																						
Acetone	6,000	na	na	<10	<10	---	---	<10	<10	<10	*ns*	<10	<10	<10	---	---	<10	<10	<10	<1.0	<10	<10
Benzene	5	na	2,900	<5	<5	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	---	---	<2	<2.0	<2.0	<1.0	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	<5	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	---	---	<2	<2.0	<2.0	<1.0	<2.0	<2.0
Chloromethane	30	na	na	---	---	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0	---	---	---	<2	<2.0	<2.0	<1.0	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	<1.0	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	<5	<5	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0	<5	---	---	<2	<2.0	<2.0	<1.0	<2.0	<2.0
Toluene	1,000	na	50,000	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	*ns*	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	<1.0	<2.0	<2.0
1,4-Dioxane (µg/L)																						
1,4-Dioxane	3	na	na	---	---	---	---	<2	<2.0	<2.0	*ns*	<2.0	<0.20	---	---	---	<2	**2.0**	<2.0	*ns*	<2.0	<0.20
Contaminant of Concern																						
Cyanide (mg/L)	0.2	0.2	na	<0.010	<0.010	**0.003J**	<0.010	<0.010	<0.01	<0.010	*ns*	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<0.010	*ns*	<0.010	<0.010
Metals of Concern (mg/L)																						
Arsenic	0.01	0.05	na	<0.010	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001
Cadmium	0.005	0.005	na	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	*ns*	<0.001	<0.001	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	*ns*	<0.001	<0.001
Chromium	0.1	0.10	na	<0.010	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	*ns*	<0.005	**0.0053**	<0.010	**0.0023J**	<0.010	<0.005	<0.005	<0.005	*ns*	<0.005	<0.005
Lead	0.015	0.015	na	<0.010	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001
Manganese	0.84	na	na	**0.143**	**0.164**	**0.0607**	**0.0266**	<0.005	<0.005	<0.005	*ns*	<0.010	<0.010	**0.0069J**	**0.0031J**	**0.0156**	<0.005	<0.005	<0.005	*ns*	<0.010	<0.010
Nickel	0.10	0.10	na	<0.040	<0.040	<0.040	**0.0032J**	<0.005	<0.005	<0.005	*ns*	<0.005	<0.005	<0.040	<0.040	**0.0059J**	<0.005	**0.0058**	<0.005	*ns*	<0.005	<0.005
NA - Laboratory																						
Methane (µg/L)	na	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Chloride (mg/L)	na	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Carbon Dioxide (mg/L)	na	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Total Suspended Solids (mg/L)	na	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
NA - Field Screening																						
pH (SU)	na	na	na	---	---	---	---	**1.79**	**6.3**	**6.0**	*ns*	**5.7**	**6.1**	---	---	---	**5.80**	**6.2**	**5.9**	**5.7**	*ns/g*	*ns/g*
ORP (mV)	na	na	na	---	---	---	---	**667.7**	**114**	**77**	*ns*	**207**	**194**	---	---	---	**142.4**	**194**	**146**	**247**	*ns/g*	*ns/g*
Specific Conductance (µS/cm)	na	na	na	---	---	---	---	**638**	**589**	**583**	*ns*	**608**	**619**	---	---	---	**205**	**273**	**261**	**181**	*ns/g*	*ns/g*
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	---	**9.29**	**7.4**	**9.0**	*ns*	**11.4**	**10.2**	---	---	---	**8.32**	**5.5**	**7.3**	**8.1**	*ns/g*	*ns/g*
Turbidity (ntu)	na	na	na	---	---	---	---	**1.05**	<5	<5	*ns*	<5	<5	---	---	---	**1.61**	<5	<5	**0**	*ns/g*	*ns/g*
Temperature (°C)	na	na	na	---	---	---	---	**15.90**	**12**	**12**	*ns*	**13**	**13**	---	---	---	**13.72**	**11**	**13**	**16**	*ns/g*	*ns/g*

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date	NH AGQS	ROD ICL	GW-2	NHP_MW-307D Deep Overburden								
				May-07	Oct-07	Apr-08	Aug-09	Oct-10	Oct-11	Nov-12	Aug-13	Jul-14
VOCs of Concern (µg/L)												
Chloroform	70	100	70	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	<5	**2.4J**	**2.5J**	**3.3**	<2.0	<2.0	*ns*	<2.0	<2.0
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Vinyl Chloride	2	2	4	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	*ns*	<2.0	<2.0
Additional VOCs (µg/L)												
Acetone	6,000	na	na	<10	---	---	<10	<10	**12**	*ns*	<10	<10
Benzene	5	na	2,900	<5	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Chloromethane	30	na	na	---	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	**3.6J**	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Toluene	1,000	na	50,000	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	*ns*	<2.0	<2.0
1,4-Dioxane (µg/L)												
1,4-Dioxane	3	na	na	---	---	---	<2	<2.0	<2.0	*ns*	<2.0	<0.20
Contaminant of Concern												
Cyanide (mg/L)	0.2	0.2	na	<0.010	**0.034**	<0.010	<0.010	<0.01	<0.010	*ns*	<0.010	<0.010
Metals of Concern (mg/L)												
Arsenic	0.01	0.05	na	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001
Cadmium	0.005	0.005	na	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	*ns*	<0.001	<0.001
Chromium	0.1	0.10	na	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	*ns*	<0.005	<0.005
Lead	0.015	0.015	na	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001
Manganese	0.84	na	na	**0.329**	**0.192**	**0.0964**	**0.0477**	**0.0686**	**0.1025**	*ns*	**0.106**	**0.081**
Nickel	0.10	0.10	na	<0.040	<0.040	**0.0022J**	<0.005	<0.005	<0.005	*ns*	<0.005	<0.005
NA - Laboratory												
Methane (µg/L)	na	na	na	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na	na	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Chloride (mg/L)	na	na	na	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na	na	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Carbon Dioxide (mg/L)	na	na	na	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Total Suspended Solids (mg/L)	na	na	na	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
NA - Field Screening												
pH (SU)	na	na	na	---	---	---	**3.54**	**6.7**	**5.9**	*ns*	**5.6**	**6.0**
ORP (mV)	na	na	na	---	---	---	**654.7**	**182**	**163**	*ns*	**181**	**124**
Specific Conductance (µS/cm)	na	na	na	---	---	---	**216**	**283**	**453**	*ns*	**535**	**464**
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	**0.85**	**0.8**	**0.8**	*ns*	**0.9**	**2.8**
Turbidity (ntu)	na	na	na	---	---	---	**0.3**	<5	<5	*ns*	<5	<5
Temperature (°C)	na	na	na	---	---	---	**13.07**	**11**	**12**	*ns*	**12**	**12**

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date	NH AGQS	ROD ICL	GW-2	NHP_MW-308S Shallow Overburden																
				Jun-07	Jun-07 DUP	Oct-07	Oct-07	Apr-08	Apr-08	Aug-09	Aug-09 DUP	Oct-10	Oct-10 DUP	Oct-11	Oct-11 DUP	Nov-12	Aug-13	Aug-13 DUP	Jul-14	Jul-14 DUP
VOCs of Concern (µg/L)																				
Chloroform	70	100	70	<5	<5	<5	<5	<5	<5	<2	<2	<2.0	<2.0	<2.0	<2.0	ns	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	**2.8J**	**2.8J**	<5	<5	**2.8**	**2.9**	**7.5**	**7.5**	**5.5**	**5.2**	ns	**5**	**5.1**	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<5	<5	**4.2J**	**4.9J**	<5	<5	**2.4**	**2.5**	**4.4**	**4.4**	**5.7**	**5.9**	ns	**7.1**	**7.2**	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<5	<5	<5	<2	<2	<2.0	<2.0	<2.0	<2.0	ns	<2.0	<2.0	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	<5	**1.2J**	**44**	**55**	**1.3J**	<5	**63**	**63**	**201**	**199**	**128**	**114**	ns	**87**	**87**	**14**	**12**
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<5	<5	<5	<2	<2	<2.0	<2.0	<2.0	<2.0	ns	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	2	2	4	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	<2.0	<2.0	ns	<2.0	<2.0	<2.0	<2.0
Additional VOCs (µg/L)																				
Acetone	6,000	na	na	<10	**3.1 J**	---	---	---	---	<10	<10	<10	<10	**23Z**	<10Z	ns	<10	<10		
Benzene	5	na	2,900	<5	<5	---	---	---	---	<2	<2	<2.0	<2.0	<2.0	<2.0	ns	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	<5	---	---	---	---	<2	<2	<2.0	<2.0	<2.0	<2.0	ns	<2.0	<2.0	<2.0	<2.0
Chloromethane	30	na	na	---	---	---	---	---	---	<2	<2	<2.0	<2.0	<2.0	<2.0	ns	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<5	<5	<5	**10**	**10**	**15**	**15**	**18**	**18**	ns	**20**	**20**	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	<5	<5	---	---	---	---	<2	<2	<2.0	<2.0	<2.0	<2.0	ns	<2.0	<2.0	<2.0	<2.0
Toluene	1,000	na	50,000	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	<2.0	<2.0	ns	<2.0	<2.0	<2.0	<2.0
1,4-Dioxane (µg/L)																				
1,4-Dioxane	3	na	na	---	---	---	---	---	---	**2**	<2	**5.2**	**6.0**	<2.0	<2.0	ns	<2.0	<2.0	<0.20	<0.20
Contaminant of Concern																				
Cyanide (mg/L)	0.2	0.2	na	**0.352**	**0.34**	**0.06**	<0.010	**0.128**	**0.129**	<0.010	<0.010	**0.011**	**0.01**	**0.015**	<0.010	ns	**0.028**	**0.027**	**0.29**	**0.28**
Metals of Concern (mg/L)																				
Arsenic	0.01	0.05	na	<0.0045	<0.010	<0.010	<0.010	<0.010	<0.010	<0.001	<0.001	**0.0029**	**0.003**	**0.0025**	**0.0024**	ns	**0.0023**	**0.0022**	**0.0023**	**0.0020**
Cadmium	0.005	0.005	na	<0.005	<0.005	**0.0066**	**0.006**	**0.0009J**	**0.00077J**	**0.0076**	**0.0071**	**0.0132**	**0.0131**	**0.0065**	**0.0066**	ns	**0.0058**	**0.0058**	**0.0025**	**0.0026**
Chromium	0.1	0.10	na	**0.0273**	**0.0259**	**0.0019J**	**0.0012J**	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns	<0.005	<0.005	<0.005	<0.005
Lead	0.015	0.015	na	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns	<0.001	<0.001	<0.001	<0.001
Manganese	0.84	na	na	**0.0887**	**0.0892**	**2.41**	**2.45**	**0.322**	**0.303**	**4.26**	**4.54**	**2.57**	**2.59**	**2.63**	**2.68**	ns	**4.12**	**3.88**	**0.322**	**0.368**
Nickel	0.10	0.10	na	<0.040	<0.040	**0.0163J**	**0.0162J**	**0.0052J**	**0.0057J**	**0.0411**	**0.039**	**0.0233**	**0.0241**	**0.0449**	**0.045**	ns	**0.0377**	**0.0376**	**0.0075**	**0.0076**
NA - Laboratory																				
Methane (µg/L)	na	na	na	---	---	---	---	---	---	**270.00**	**350.00**	**290**	ns	ns	ns	ns	ns	ns	**13**	ns
Alkalinity (mg/L)	na	na	na	---	---	---	---	---	---	**110**	**110**	**96**	ns	ns	ns	ns	ns	ns	**350**	ns
Chloride (mg/L)	na	na	na	---	---	---	---	---	---	**12**	**12**	**28**	ns	ns	ns	ns	ns	ns	**4.7**	ns
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	---	---	---	<0.05	<0.05	<0.05	ns	ns	ns	ns	ns	ns	<0.05	ns
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	---	---	---	**0.75**	**0.79**	**0.18**	ns	ns	ns	ns	ns	ns	**2.1**	ns
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	---	---	---	**0.75**	**0.78**	**0.17**	ns	ns	ns	ns	ns	ns	**2.1**	ns
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	---	---	---	**31**	**31**	**35**	ns	ns	ns	ns	ns	ns	**50**	ns
Total Organic Carbon (mg/L)	na	na	na	---	---	---	---	---	---	ns	ns	**2.7**	ns	ns	ns	ns	ns	ns	**9.2**	ns
Carbon Dioxide (mg/L)	na	na	na	---	---	---	---	---	---	**99**	**100**	**79.00**	ns	ns	ns	ns	ns	ns	**58**	ns
Total Suspended Solids (mg/L)	na	na	na	---	---	---	---	---	---	<1.3	<1.3	<2.5	ns	ns	ns	ns	ns	ns	**5.5**	ns
NA - Field Screening																				
pH (SU)	na	na	na	---	---	---	---	---	---	**5.40**	ns	**6.7**	ns	ns/g	ns	ns	ns/g	ns	ns/g	ns/g
ORP (mV)	na	na	na	---	---	---	---	---	---	**152.5**	ns	**10**	ns	ns/g	ns	ns	ns/g	ns	ns/g	ns/g
Specific Conductance (µS/cm)	na	na	na	---	---	---	---	---	---	**230**	ns	**355**	ns	ns/g	ns	ns	ns/g	ns	ns/g	ns/g
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	---	---	---	**0.87**	ns	**0.7**	ns	ns/g	ns	ns	ns/g	ns	ns/g	ns/g
Turbidity (ntu)	na	na	na	---	---	---	---	---	---	**0.48**	ns	<5	ns	ns/g	ns	ns	ns/g	ns	ns/g	ns/g
Temperature (°C)	na	na	na	---	---	---	---	---	---	**14.69**	ns	**11**	ns	ns/g	ns	ns	ns/g	ns	ns/g	ns/g

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen	NH AGQS	ROD ICL	GW-2	NHP_MW-308D Deep Overburden									NHP_MW-308R Bedrock								
Sampling Event Date				**Jun-07**	**Nov-07**	**Apr-08**	**Aug-09**	**Oct-10**	**Nov-11**	**Nov-12**	**Aug-13**	**Jul-14**	**Jun-07**	**Oct-07**	**Apr-08**	**Aug-09**	**Oct-10**	**Oct-11**	**Nov-12**	**Aug-13**	**Jul-14**
VOCs of Concern (µg/L)																					
Chloroform	70	100	70	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2	ns/1	<2.0	ns	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2	ns/1	<2.0	ns	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2	ns/1	<2.0	ns	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2	ns/1	<2.0	ns	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	**1.6J**	<5	**0.0011J**	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2	ns/1	<2.0	ns	<2.0	<2.0
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2	ns/1	<2.0	ns	<2.0	<2.0
Vinyl Chloride	2	2	4	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0	nd	nd	nd	nd	ns/1	<2.0	ns	<2.0	<2.0
Additional VOCs (µg/L)																					
Acetone	6,000	na	na	<10	---	---	<10	<10	<10	ns	<10	<10	**53 J**	---	---	**16**	ns/1	**21**	ns	**30**	**32**
Benzene	5	na	2,900	<5	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	---	---	<2	ns/1	<2.0	ns	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	---	---	**4.9**	ns/1	**3.8**	ns	**9.4**	**12**
Chloromethane	30	na	na	---	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0	---	---	---	<2	ns/1	<2.0	ns	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2	ns/1	<2.0	ns	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	<5	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	---	---	<2	ns/1	<2.0	ns	<2.0	<2.0
Toluene	1,000	na	50,000	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0	nd	nd	nd	nd	ns/1	<2.0	ns	<2.0	<2.0
1,4-Dioxane (µg/L)																					
1,4-Dioxane	3	na	na	---	---	---	<2.0	<2.0	<2.0	ns	<2.0	<0.20	---	---	---	<2	ns/1	<2.0	ns	<2.0	**0.76**
Contaminant of Concern																					
Cyanide (mg/L)	0.2	0.2	na	<0.010	**0.0017J**	<0.010	<0.010	<0.01	<0.010	ns	<0.010	<0.010	<0.010	**0.0049J**	<0.010	<0.010	ns/1	<0.010	<0.010	<0.010	<0.010
Metals of Concern (mg/L)																					
Arsenic	0.01	0.05	na	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	ns	<0.001	<0.001	<0.0207	**0.0195**	**0.0128**	**0.0184**	ns/1	**0.013**	**0.177**	**0.0181**	**0.0167**
Cadmium	0.005	0.005	na	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	ns	<0.001	<0.001	<0.005	<0.005	<0.005	<0.002	ns/1	<0.002	<0.001	<0.001	<0.001
Chromium	0.1	0.10	na	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	ns	<0.005	<0.005	**0.0093J**	**0.0132**	<0.010	<0.005	ns/1	<0.005	<0.005	<0.005	<0.005
Lead	0.015	0.015	na	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	ns	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	ns/1	<0.001	<0.001	<0.001	<0.001
Manganese	0.84	na	na	**0.344**	**0.219**	**0.519**	**0.671**	**0.7096**	**0.5776**	ns	**1.37**	**2.49**	<0.005	**0.0044J**	**0.0011J**	<0.005	ns/1	<0.005	<0.010	<0.010	<0.010
Nickel	0.10	0.10	na	<0.040	<0.040	**0.0018J**	<0.005	<0.005	<0.005	ns	<0.005	**0.0092**	<0.040	<0.040	**0.0019J**	<0.005	ns/1	<0.005	<0.005	<0.005	<0.005
NA - Laboratory																					
Methane (µg/L)	na	na	na	---	---	---	**0.32**	**24**	ns	ns	ns	ns	---	---	---	**16.00**	ns/1	ns	ns	ns	**19**
Alkalinity (mg/L)	na	na	na	---	---	---	**31**	**30**	ns	ns	ns	ns	---	---	---	**310**	ns/1	ns	**259**	ns	**250 J**
Chloride (mg/L)	na	na	na	---	---	---	**120**	**150**	ns	ns	ns	ns	---	---	---	**83**	ns/1	ns	**93**	ns	**96**
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	<0.050	<0.05	ns	ns	ns	ns	---	---	---	<0.05	ns/1	ns	ns	ns	<0.050
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	**3.8**	**4.0**	ns	ns	ns	ns	---	---	---	<0.05	ns/1	ns	ns	ns	<0.050
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	**3.8**	**4.0**	ns	ns	ns	ns	---	---	---	<0.05	ns/1	ns	ns	ns	<0.050
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	**14**	**14**	ns	ns	ns	ns	---	---	---	**32**	ns/1	ns	**24**	ns	**23**
Total Organic Carbon (mg/L)	na	na	na	---	---	---	ns	<0.5	ns	ns	ns	ns	---	---	---	ns	ns/1	ns	**2.9**	ns	**2.7**
Carbon Dioxide (mg/L)	na	na	na	---	---	---	**67**	**46.00**	ns	ns	ns	ns	---	---	---	<5	ns/1	ns	ns	ns	<5.0
Total Suspended Solids (mg/L)	na	na	na	---	---	---	**4.1J**	<2.5	ns	ns	ns	ns	---	---	---	**2.2J**	ns/1	ns	ns	ns	<2.5
NA - Field Screening																					
pH (SU)	na	na	na	---	---	---	**5.67**	**6.3**	**6.1**	ns	**5.8**	**4.4 J***	---	---	---	ns	ns/1	ns/ir	**11.9**	ns/ir	ns/ir
ORP (mV)	na	na	na	---	---	---	**158.7**	**93**	**139**	ns	**197**	**290**	---	---	---	ns	ns/1	ns/ir	**-130 J***	ns/ir	ns/ir
Specific Conductance (µS/cm)	na	na	na	---	---	---	**536**	**563**	**419**	ns	**359**	**372**	---	---	---	ns	ns/1	ns/ir	**1,798 J***	ns/ir	ns/ir
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	**0.58**	**0.7**	**0.8**	ns	**0.6**	**0.7**	---	---	---	ns	ns/1	ns/ir	**1.3 J***	ns/ir	ns/ir
Turbidity (ntu)	na	na	na	---	---	---	**7.81**	<5	<5	ns	<5	<5	---	---	---	ns	ns/1	ns/ir	<5	ns/ir	ns/ir
Temperature (°C)	na	na	na	---	---	---	**13.27**	**12**	**11**	ns	**12**	**14**	---	---	---	ns	ns/1	ns/ir	**13**	ns/ir	ns/ir

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen	NH AGQS	ROD ICL	GW-2	NHP_MW-309S Shallow Overburden									NHP_MW-309D Deep Overburden										
Sampling Event Date				**May-07**	**Oct-07**	**Apr-08**	**Aug-09**	**Oct-10**	**Nov-11**	**Nov-12**	**Aug-13**	**Jul-14**	**May-07**	**Oct-07**	**Apr-08**	**Apr-08**	**Aug-09**	**Aug-09 DUP**	**Oct-10**	**Nov-11**	**Nov-12**	**Aug-13**	**Jul-14**
VOCs of Concern (µg/L)																							
Chloroform	70	100	70	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	**14**	**16**	---	---	<2	<2	<2.0	<2.0	ns	<2.0	<2.0
1,1-Dichloroethene	7	7	630	**5**	<5	<5	<2	<2.0	<2.0	ns	<2.0	**2.1 J**	<5	**2.3J**	---	---	<2	<2	<2.0	<2.0	ns	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	**9.3**	**11**	**3.5**	**4.9**	**4.9**	**9.7**	ns	**7**	**41 J**	<5	**7.5**	---	---	**2.5**	**2.3**	<2.0	**2.2**	ns	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	**0.77J**	**2.9J**	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	---	---	**2.1**	<2	<2.0	<2.0	ns	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	**3.6J**	**3.1J**	**0.98J**	**2.1**	**4.7**	**5.2**	ns	**3.1**	**5.4 J**	**29**	**28**	**13**	**14**	**11**	**10**	**5.6**	**8.6**	ns	**4.6**	**4.6**
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	---	---	<2	<2	<2.0	<2.0	ns	<2.0	<2.0
Vinyl Chloride	2	2	4	nd	nd	nd	nd	nd	**9.3**	ns	**5.3**	**45**	nd	nd	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0
Additional VOCs (µg/L)																							
Acetone	6,000	na	na	<10	---	---	<10	<10	<10	ns	<10	<10	<10	---	---	---	<10	<10	<10	<10	ns	<10	<10
Benzene	5	na	2,900	<5	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	---	---	---	<2	<2	<2.0	<2.0	ns	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0	<5	---	---	---	<2	<2	<2.0	<2.0	ns	<2.0	<2.0
Chloromethane	30	na	na	---	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0	---	---	---	---	<2	<2	<2.0	<2.0	ns	<2.0	<2.0
1,1-Dichloroethane	81	na	130	**2.8J**	<5	<5	<2	**5.7**	**4.9**	ns	**5.6**	**7.0 J**	<5	<5	---	---	<2	<2	<2.0	<2.0	ns	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	**1.3J**	---	---	<2	<2.0	<2.0	ns	<2.0	<2.0	<5		---	---	<2	<2	<2.0	<2.0	ns	<2.0	<2.0
Toluene	1,000	na	50,000	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0	nd	nd	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0
1,4-Dioxane (µg/L)																							
1,4-Dioxane	3	na	na	---	<2	---	<2	<2.0	<2.0	ns	<2.0	<0.20	**5.8**	---	---	---	**2.1**	**2.68**	<2.0	<2.0	ns	<2.0	**0.42**
Contaminant of Concern																							
Cyanide (mg/L)	0.2	0.2	na	<0.0056	**0.0507J**	<0.010	<0.010	<0.01	<0.010	ns	<0.010	<0.010	<0.010	**0.0719J**	**0.0048J**	**0.0484J**	**0.014**	**0.013**	<0.01	<0.010	ns	<0.010	<0.010
Metals of Concern (mg/L)																							
Arsenic	0.01	0.05	na	**0.0046J**	**0.0111**	<0.010	**0.0049**	**0.0149**	**0.0278**	ns	**0.0445**	**0.0254**	**0.0114**	**0.0069J**	**0.0955**	**0.00918**	**0.0042**	**0.0043**	**0.0017**	**0.002**	ns	**0.0021**	**0.0016**
Cadmium	0.005	0.005	na	**0.0672**	**0.0744**	**0.0146**	**0.0114**	**0.0049**	**0.0095**	ns	**0.0033**	**0.0035**	<0.005	<0.005	**0.011J**	**0.0121J**	<0.002	<0.002	<0.002	<0.002	ns	<0.001	<0.001
Chromium	0.1	0.10	na	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	ns	<0.005	<0.005	<0.010	**0.0023**	**0.165**	**0.154**	**0.0058**	**0.0059**	<0.005	<0.005	ns	<0.005	<0.005
Lead	0.015	0.015	na	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	ns	<0.001	<0.001	<0.010	<0.010	**0.0521**	**0.0539**	**0.0034**	**0.0034**	<0.001	<0.001	ns	**0.001**	<0.001
Manganese	0.84	na	na	**3.56**	**3.94**	**0.519**	**0.663**	**0.4834**	**0.3364**	ns	**0.31**	**0.268**	<0.015	**0.362**	**2.66**	**2.7**	**0.4009**	**0.3862**	**0.4023**	**0.1982**	ns	**0.226**	**0.152**
Nickel	0.10	0.10	na	**0.0551J**	**0.0515**	**0.0216J**	**0.0131**	**0.0546**	**0.0089**	ns	**0.0091**	**0.0109**	<0.040	**0.00104J**	**0.131**	**0.129**	**0.0114**	**0.011**	**0.0065**	**0.0079**	ns	**0.006**	**0.0052**
NA - Laboratory																							
Methane (µg/L)	na	na	na	---	---	---	**280.00**	**4300**	ns	ns	ns	**2,300**	---	---	---	---	**3.6J**	**2.5J**	**0.21**	ns	ns	ns	**0.62**
Alkalinity (mg/L)	na	na	na	---	---	---	**140**	**180**	ns	ns	ns	**190**	---	---	---	---	**130**	**130**	**110**	ns	ns	ns	**92**
Chloride (mg/L)	na	na	na	---	---	---	**20**	**27**	ns	ns	ns	**43**	---	---	---	---	**59**	**58**	**97**	ns	ns	ns	**83**
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	<0.050	<0.05	ns	ns	ns	<0.050	---	---	---	---	<0.050	<0.050	<0.05	ns	ns	ns	<0.050
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	**1**	<0.05	ns	ns	ns	**0.21**	---	---	---	---	**0.98**	**0.97**	**1.0**	ns	ns	ns	**1.3**
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	**1**	<0.05	ns	ns	ns	**0.20**	---	---	---	---	**0.97**	**0.95**	**0.98**	ns	ns	ns	**1.3**
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	**21**	**16**	ns	ns	ns	**9.5**	---	---	---	---	**21**	**21**	**23**	ns	ns	ns	**21**
Total Organic Carbon (mg/L)	na	na	na	---	---	---	ns	**4.4**	ns	ns	ns	**5.5**	---	---	---	---	ns	ns	**0.93**	ns	ns	ns	**0.92**
Carbon Dioxide (mg/L)	na	na	na	---	---	---	**57**	**19.0**	ns	ns	ns	**24**	---	---	---	---	**19**	**20**	**15.00**	ns	ns	ns	**26**
Total Suspended Solids (mg/L)	na	na	na	---	---	---	**1.8J**	**6.0**	ns	ns	ns	<2.5	---	---	---	---	**220J**	**200J**	<2.5	ns	ns	ns	**6.5**
NA - Field Screening																							
pH (SU)	na	na	na	---	---	---	**6.57**	**7.6**	ns/g	ns	ns/g	ns/g	---	---	---	---	**4.97**	ns	**7.4**	**7.3**	ns	**6.7**	**7.0**
ORP (mV)	na	na	na	---	---	---	**-17.0**	**-116**	ns/g	ns	ns/g	ns/g	---	---	---	---	**490.6**	ns	**-15**	**89**	ns	**302**	**156**
Specific Conductance (µS/cm)	na	na	na	---	---	---	**370**	**476 J***	ns/g	ns	ns/g	ns/g	---	---	---	---	**487**	ns	**559 J***	**440**	ns	**535**	**471**
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	**0.77**	**0.5**	ns/g	ns	ns/g	ns/g	---	---	---	---	**0.91**	ns	**0.6**	**1.6**	ns	**1.1**	**2.8**
Turbidity (ntu)	na	na	na	---	---	---	**2.78**	<5	ns/g	ns	ns/g	ns/g	---	---	---	---	**211**	ns	<5	<5	ns	<5	<5
Temperature (°C)	na	na	na	---	---	---	**13.42**	**13**	ns/g	ns	ns/g	ns/g	---	---	---	---	**13.72**	ns	**12**	**11**	ns	**13**	**14**

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date	NH AGQS	ROD ICL	GW-2	NHP_MW-309R Bedrock									NHP_MW-310S Shallow Overburden								
				May-07	Oct-07	Apr-08	Aug-09	Oct-10	Nov-11	Nov-12	Aug-13	Jul-14	May-07	Oct-07	Apr-08	Aug-09	Oct-10	Oct-11	Nov-12	Aug-13	Jul-14
VOCs of Concern (µg/L)																					
Chloroform	70	100	70	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	**0.61J**	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Vinyl Chloride	2	2	4	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	*ns*	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	*ns*	<2.0	<2.0
Additional VOCs (µg/L)																					
Acetone	6,000	na	na	<10	---	---	<10	*ns/1*	<10	*ns*	<10	<10	**120J**	---	---	<10	<10	<10	*ns*	<10	<10
Benzene	5	na	2,900	<5	---	---	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	**2.4J**	---	---	**2.1**	<2.0	**4**	*ns*	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	---	---	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Chloromethane	30	na	na	---	---	---	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	---	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	<5	<5	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	**2.3J**	---	---	<2	*ns/1*	<2.0	*ns*	<2.0	<2.0	<5	---	---	<2	<2.0	<2.0	*ns*	<2.0	<2.0
Toluene	1,000	na	50,000	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	*ns*	<2.0	<2.0	*nd*	*nd*	*nd*	*nd*	*nd*	**3.2**	*ns*	<2.0	<2.0
1,4-Dioxane (µg/L)																					
1,4-Dioxane	3	na	na	---	---	---	<2	*ns/1*	<2.0	*ns*	<2.0	<0.20	---	---	---	<2.0	<2.0	<2.0	*ns*	<2.0	**0.40**
Contaminant of Concern																					
Cyanide (mg/L)	0.2	0.2	na	**0.0942**	**0.02J**	<0.0046	<0.010	*ns/1*	<0.010	<0.010	<0.010	<0.010	**0.047**	**0.0572J**	**0.024**	**0.093**	**0.077**	<0.010	*ns*	<0.010	<0.010
Metals of Concern (mg/L)																					
Arsenic	0.01	0.05	na	<0.010	<0.010	<0.010	<0.001	*ns/1*	<0.001	<0.001	<0.001	<0.001	**0.0205**	<0.0099	**0.0243**	**0.0176**	**0.0086**	**0.0154**	*ns*	**0.0099**	**0.0211**
Cadmium	0.005	0.005	na	<0.005	<0.005	<0.005	<0.002	*ns/1*	<0.002	<0.001	<0.001	<0.001	**0.014**	<0.0018	**0.0104**	**0.0024**	**0.0043**	**0.0097**	*ns*	**0.0134**	**0.0026**
Chromium	0.1	0.10	na	<0.010	<0.010	<0.010	<0.005	*ns/1*	<0.005	<0.005	**0.005**	**0.0056**	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	*ns*	<0.005	<0.005
Lead	0.015	0.015	na	<0.010	<0.010	<0.010	<0.001	*ns/1*	<0.001	<0.001	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	*ns*	<0.001	<0.001
Manganese	0.84	na	na	**0.0564**	**0.138**	**0.233**	**0.1783**	*ns/1*	**0.1836**	**0.065**	**0.059**	**0.024**	**3.27**	**1.33**	**4.55**	**0.2567**	**0.2574**	**1.55**	*ns*	**2.8**	**1.64**
Nickel	0.10	0.10	na	<0.040	<0.040	<0.040	<0.005	*ns/1*	<0.005	<0.005	<0.005	<0.005	**0.0508**	**0.0107J**	**0.0719**	**0.0222**	**0.0189**	**0.0346**	*ns*	**0.0174**	**0.0141**
NA - Laboratory																					
Methane (µg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	**8,100**
Alkalinity (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	**67.1**	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	**380**
Chloride (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	**160**	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	**7.9**
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	<0.050
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	**0.090**
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	**0.085**
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	*ns*	*ns/1*	*ns*	**25**	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	**0.5**
Total Organic Carbon (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	<0.500	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	**12**
Carbon Dioxide (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	**30**
Total Suspended Solids (mg/L)	na	na	na	---	---	---	*ns*	*ns/1*	*ns*	*ns*	*ns*	*ns*	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	**7.5**
NA - Field Screening																					
pH (SU)	na	na	na	---	---	---	**4.21**	*ns/1*	**8.2**	**8.0**	**7.8**	*ns/ir*	---	---	---	**6.51**	**8.4**	*ns/g*	*ns*	*ns/g*	*ns/g*
ORP (mV)	na	na	na	---	---	---	**463.8**	*ns/1*	**89**	**144**	**319**	*ns/ir*	---	---	---	**316.1**	**137**	*ns/g*	*ns*	*ns/g*	*ns/g*
Specific Conductance (µS/cm)	na	na	na	---	---	---	**667**	*ns/1*	**694**	**719**	**730**	*ns/ir*	---	---	---	**433**	**649 J***	*ns/g*	*ns*	*ns/g*	*ns/g*
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	**4.39**	*ns/1*	**2.4**	**1.4**	**2.2**	*ns/ir*	---	---	---	**0.45**	**0.8**	*ns/g*	*ns*	*ns/g*	*ns/g*
Turbidity (ntu)	na	na	na	---	---	---	**1.28**	*ns/1*	**9**	<5	<5	*ns/ir*	---	---	---	**1.21**	<5	*ns/g*	*ns*	*ns/g*	*ns/g*
Temperature (°C)	na	na	na	---	---	---	**20.11**	*ns/1*	**12**	**10**	**16**	*ns/ir*	---	---	---	**15.88**	**12**	*ns/g*	*ns*	*ns/g*	*ns/g*

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date	NH AGQS	ROD ICL	GW-2	NHP_MW-310D Deep Overburden									NHP_MW-311S Shallow Overburden								
				May-07	Oct-07	Apr-08	Aug-09	Oct-10	Oct-11	Nov-12	Aug-13	Jul-14	May-07	Oct-07	Apr-08	Aug-09	Oct-10	Oct-11	Nov-12	Aug-13	Jul-14
VOCs of Concern (µg/L)																					
Chloroform	70	100	70	<5	<5	<5	<2.0	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2.0	ns	<2.0	ns	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	<2.0	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2.0	ns	<2.0	ns	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<5	<5	<5	<2.0	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2.0	ns	<2.0	ns	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<2.0	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2.0	ns	<2.0	ns	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	<5	<5	<5	<2.0	<2.0	<2.0	ns	<2.0	<2.0	**1J**	<5	<5	<2.0	ns	<2.0	ns	<2.0	<2.0
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<2.0	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2.0	ns	<2.0	ns	<2.0	<2.0
Vinyl Chloride	2	2	4	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0
Additional VOCs (µg/L)																					
Acetone	6,000	na	na	<10	---	---	<10	<10	<10	ns	<10	<10	<10	---	---	<10	ns	**10**	ns	<10	<10
Benzene	5	na	2,900	<5	---	---	<2.0	<2.0	<2.0	ns	<2.0	<2.0	<5	---	---	<2.0	ns	<2.0	ns	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	---	---	<2.0	<2.0	<2.0	ns	<2.0	<2.0	<5	---	---	<2.0	ns	<2.0	ns	<2.0	<2.0
Chloromethane	30	na	na	---	---	---	<2.0	<2.0	<2.0	ns	<2.0	<2.0	---	---	---	<2.0	ns	<2.0	ns	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<2.0	<2.0	<2.0	ns	<2.0	<2.0	<5	<5	<5	<2.0	ns	<2.0	ns	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	**1J**	---	---	<2.0	**2.1**	**3.5**	ns	<2.0	<2.0	<5	---	---	<2.0	ns	<2.0	ns	<2.0	<2.0
Toluene	1,000	na	50,000	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0
1,4-Dioxane (µg/L)																					
1,4-Dioxane	3	na	na	---	---	---	<2.0	<2.0	<2.0	ns	<2.0	<0.20	---	---	---	<2.0	ns	<2.0	ns	<2.0	<0.20
Contaminant of Concern																					
Cyanide (mg/L)	0.2	0.2	na	<0.010	<0.010	<0.010	<0.010	<0.01	<0.01	ns	<0.010	<0.010	<0.0049	**0.0393J**	<0.010	<0.010	ns	<0.010	ns	<0.010	<0.010
Metals of Concern (mg/L)																					
Arsenic	0.01	0.05	na	<0.001	<0.010	<0.010	<0.001	<0.001	<0.001	ns	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	ns	<0.001	ns	**0.0014**	<0.001
Cadmium	0.005	0.005	na	<0.002	<0.005	<0.005	<0.002	<0.002	<0.002	ns	<0.001	<0.001	<0.005	<0.005	<0.005	<0.002	ns	<0.002	ns	<0.001	<0.001
Chromium	0.1	0.10	na	<0.005	<0.010	<0.010	<0.005	<0.005	<0.005	ns	<0.005	<0.005	<0.010	<0.010	**0.00045J**	<0.005	ns	<0.005	ns	<0.005	<0.005
Lead	0.015	0.015	na	<0.015	<0.010	<0.010	<0.001	<0.001	<0.001	ns	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	ns	<0.001	ns	**0.0012**	<0.001
Manganese	0.84	na	na	**0.0103**	**0.0038J**	**0.0092J**	**0.0118**	**0.0119**	**0.0136**	ns	<0.010	<0.010	**0.0948**	**0.372**	**0.172**	**0.4914**	ns	**0.0397**	ns	**0.044**	**0.013**
Nickel	0.10	0.10	na	<0.015	<0.040	<0.040	<0.005	<0.005	<0.005	ns	<0.005	<0.005	<0.040	<0.040	<0.040	<0.005	ns	<0.005	ns	<0.005	<0.005
NA - Laboratory																					
Methane (µg/L)	na	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Alkalinity (mg/L)	na	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Chloride (mg/L)	na	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Total Organic Carbon (mg/L)	na	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Carbon Dioxide (mg/L)	na	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Total Suspended Solids (mg/L)	na	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
NA - Field Screening																					
pH (SU)	na	na	na	---	---	---	**5.91**	**6.4**	**6.2**	ns	**6**	**6.1**	---	---	---	**5.70**	ns	ns/g	ns	ns/g	ns/g
ORP (mV)	na	na	na	---	---	---	**165.9**	**131**	**238**	ns	**235**	**210**	---	---	---	**56.3**	ns	ns/g	ns	ns/g	ns/g
Specific Conductance (µS/cm)	na	na	na	---	---	---	**489**	**519 J***	**522**	ns	**626**	**602**	---	---	---	**204**	ns	ns/g	ns	ns/g	ns/g
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	**8.53**	**8.5**	**8.5**	ns	**8.9**	**9.4**	---	---	---	**3.18**	ns	ns/g	ns	ns/g	ns/g
Turbidity (ntu)	na	na	na	---	---	---	**0.99**	<5	<5	ns	<5	<5	---	---	---	**0.47**	ns	ns/g	ns	ns/g	ns/g
Temperature (°C)	na	na	na	---	---	---	**15.65**	**12**	**11**	ns	**14**	**14**	---	---	---	**19.70**	ns	ns/g	ns	ns/g	ns/g

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date	NH AGQS	ROD ICL	GW-2	NHP_MW-311D Deep Overburden									NHP_MW-312S Shallow Overburden								
				May-07	Oct-07	Apr-08	Aug-09	Oct-10	Oct-11	Nov-12	Aug-13	Jul-14	May-07	Oct-07	Apr-08	Aug-09	Oct-10	Oct-11	Nov-12	Aug-13	Jul-14
VOCs of Concern (µg/L)																					
Chloroform	70	100	70	<5	<5	<5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5	<5	<5	<2.0	<2.0	<2.0	ns	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5	<5	<5	<2.0	<2.0	<2.0	ns	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<5	<5	<5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5	<5	<5	<2.0	<2.0	<2.0	ns	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5	<5	<5	<2.0	<2.0	<2.0	ns	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	**0.87J**	<5	<5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5	<5	<5	<2.0	<2.0	<2.0	ns	<2.0	<2.0
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5	<5	---	<2.0	<2.0	<2.0	ns	<2.0	<2.0
Vinyl Chloride	2	2	4	nd	nd	nd	nd	nd	<2.0	<2.0	<2.0	<2.0	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0
Additional VOCs (µg/L)																					
Acetone	6,000	na	na	<10	---	---	<10	<10	<10	<10	<10	<10	<10	---	---	<10	<10	<10	ns	<10	<10
Benzene	5	na	2,900	<5	---	---	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5	---	---	<2.0	<2.0	<2.0	ns	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	---	---	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5	---	---	<2.0	<2.0	<2.0	ns	<2.0	<2.0
Chloromethane	30	na	na	---	---	---	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	---	---	---	<2.0	<2.0	<2.0	ns	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5	<5	<5	<2.0	<2.0	<2.0	ns	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	<5	---	---	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5	---	---	<2.0	<2.0	<2.0	ns	<2.0	<2.0
Toluene	1,000	na	50,000	nd	nd	nd	nd	nd	<2.0	<2.0	<2.0	<2.0	nd	nd	nd	nd	nd	<2.0	ns	<2.0	<2.0
1,4-Dioxane (µg/L)																					
1,4-Dioxane	3	na	na	---	---	---	<2.0	<2.0	<2.0	ns	<2.0	<0.20	---	---	---	---	<2.0	<2.0	ns	<2.0	**0.42**
Contaminant of Concern																					
Cyanide (mg/L)	0.2	0.2	na	<0.0056	**0.0029J**	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.010	<0.004	**0.0018J**	<0.010	<0.010	<0.01	<0.010	ns	<0.010	<0.010
Metals of Concern (mg/L)																					
Arsenic	0.01	0.05	na	**0.0064**	<0.010	<0.010	**0.0014**	**0.002**	<0.001	0.0013	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	ns	<0.001	<0.001
Cadmium	0.005	0.005	na	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	ns	<0.001	<0.001
Chromium	0.1	0.10	na	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	**0.0016J**	<0.010	<0.005	<0.005	<0.005	ns	<0.005	<0.005
Lead	0.015	0.015	na	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	ns	<0.001	<0.001
Manganese	0.84	na	na	**2.96**	**1.21**	**2.4**	**0.8711**	**0.4022**	**0.298**	**0.24**	**0.151**	**0.092**	**0.033**	**0.0401**	**0.0328**	**0.0135**	**0.0276**	**0.0222**	ns	**0.025**	<0.010
Nickel	0.10	0.10	na	<0.040	**0.004J**	**0.0046J**	<0.005	<0.005	<0.005	<0.005	**0.0051**	<0.005	**0.0454**	**0.0411**	**0.0133J**	<0.005	<0.005	<0.005	ns	<0.005	<0.005
NA - Laboratory																					
Methane (µg/L)	na	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Alkalinity (mg/L)	na	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Chloride (mg/L)	na	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Total Organic Carbon (mg/L)	na	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Carbon Dioxide (mg/L)	na	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Total Suspended Solids (mg/L)	na	na	na	---	---	---	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
NA - Field Screening																					
pH (SU)	na	na	na	---	---	---	**4.97**	**6.4**	**6**	**6.1**	**5.7**	**6.1**	---	---	---	**5.69**	**6.5**	ns/g	ns	ns/g	ns/g
ORP (mV)	na	na	na	---	---	---	**565.9**	**120**	**118**	**172**	**219**	**124**	---	---	---	**132.3**	**135 J***	ns/g	ns	ns/g	ns/g
Specific Conductance (µS/cm)	na	na	na	---	---	---	**357**	**372**	**412**	**388**	**388**	**368**	---	---	---	**166**	**105**	ns/g	ns	ns/g	ns/g
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	**2.41**	**2.2**	**3.2**	**3.4**	**4.8**	**8.4**	---	---	---	**4.22**	**0.9**	ns/g	ns	ns/g	ns/g
Turbidity (ntu)	na	na	na	---	---	---	**5.65**	**14**	<5	**11**	<5	<5	---	---	---	**0.43**	<5	ns/g	ns	ns/g	ns/g
Temperature (°C)	na	na	na	---	---	---	**18.18**	**13**	**12**	**10**	**13**	**13**	---	---	---	**17.98**	**17**	ns/g	ns	ns/g	ns/g

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date	NH AGQS	ROD ICL	GW-2	NHP_MW-312D Deep Overburden										NHP_MW-400R Bedrock			NHP_MW-401S Shallow Overburden		
				May-07	Oct-07	Apr-08	Apr-08	Aug-09	Oct-10	Oct-11	Nov-12	Aug-13	Jul-14	Nov-12	Aug-13	Jul-14	Nov-12	Aug-13	Jul-14
VOCs of Concern (µg/L)																			
Chloroform	70	100	70	<5	<5	<5	<5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<5	<5	<5	<5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<5	<5	<5	<5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<5	<5	<5	<5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	<5	<5	<5	<5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**2.5**	**5.5**	**5.0**	<2.0	**3.5**	**6.9**
Tetrachloroethene (PCE)	5	5	240	<5	<5	<5	<5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	2	2	4	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Additional VOCs (µg/L)																			
Acetone	6,000	na	na	<10	---	---	---	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	5	na	2,900	<5	---	---	---	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	70	na	na	<5	---	---	---	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloromethane	30	na	na	---	---	---	---	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<5	<5	<5	<5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	<5	---	---	---	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Toluene	1,000	na	50,000	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na	na	---	---	---	---	<2.0	<2.0	<2.0	*ns*	<2.0	**0.39**	<2.0	<2.0	**0.90**	<2.0	<2.0	<0.20
Contaminant of Concern																			
Cyanide (mg/L)	0.2	0.2	na	<0.005	**0.032**	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Metals of Concern (mg/L)																			
Arsenic	0.01	0.05	na	<0.010	**0.0049J**	<0.010	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.003**	<0.001	<0.001	**0.0013**	<0.001	<0.001
Cadmium	0.005	0.005	na	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001
Chromium	0.1	0.10	na	<0.010	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Lead	0.015	0.015	na	<0.010	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	0.84	na	na	**0.224**	**0.405**	**0.241**	**0.25**	**0.2531**	**0.2084**	**0.1579**	**0.128**	**0.098**	**0.038**	**0.016**	**0.026**	**0.028**	**0.548**	**0.69**	**0.465**
Nickel	0.10	0.10	na	<0.040	<0.040	<0.040	<0.040	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0211**	**0.0204**	**0.0125**
NA - Laboratory																			
Methane (µg/L)	na	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**26**	*ns*	*ns*	**20**
Alkalinity (mg/L)	na	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**51**	*ns*	*ns*	**74**
Chloride (mg/L)	na	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**76**	*ns*	*ns*	**81**
Nitrite-Nitrogen (mg/L)	1	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	<0.050	*ns*	*ns*	<0.050
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	<0.050	*ns*	*ns*	**0.34**
Nitrate-Nitrogen (mg/L)	10	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	<0.050	*ns*	*ns*	**0.33**
Sulfate, as SO_4 (mg/L)	500	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**33**	*ns*	*ns*	**37**
Total Organic Carbon (mg/L)	na	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	<0.50	*ns*	*ns*	**2.4**
Carbon Dioxide (mg/L)	na	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**0.91 J**	*ns*	*ns*	**46**
Total Suspended Solids (mg/L)	na	na	na	---	---	---	---	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	<2.5	*ns*	*ns*	<2.5
NA - Field Screening																			
pH (SU)	na	na	na	---	---	---	---	**3.58**	**5.8**	**5.8**	**5.7**	**5.4**	**6.1**	**9.0**	**8.0**	*ns/ir*	**6.3**	**6.1**	**6.4**
ORP (mV)	na	na	na	---	---	---	---	**679.7**	**150 J***	**5**	**177**	**230**	**190**	**81**	**283**	*ns/ir*	**-100**	**32**	**-18**
Specific Conductance (µS/cm)	na	na	na	---	---	---	---	**127**	**107**	**84**	**113**	**139**	**77**	**395**	**441**	*ns/ir*	**312**	**323**	**457**
Dissolved Oxygen (mg/L)	na	na	na	---	---	---	---	**0.62**	**0.8**	**1.9**	**0.8**	**1.0**	**5.2**	**4.0**	**1.1**	*ns/ir*	**0.6**	**0.8**	**0.7**
Turbidity (ntu)	na	na	na	---	---	---	---	**0.10**	<5	<5	<5	<5	<5	<5	<5	*ns/ir*	<5	<5	<5
Temperature (°C)	na	na	na	---	---	---	---	**15.45**	**15**	**15**	**13**	**14**	**14**	**15**	**18**	*ns/ir*	**13**	**14**	**15**

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date	NH AGQS	ROD ICL	GW-2	NHP_MW-401D Deep Overburden			NHP_MW-402D Deep Overburden			
				Nov-12	Aug-13	Jul-14	Nov-12	Nov-12 DUP	Aug-13	Jul-14
VOCs of Concern (µg/L)										
Chloroform	70	100	70	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethene	7	7	630	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Cis-1,2-Dichoroethene	70	70	na	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1,1-Trichloroethane	200	200	27,000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Trichloroethene (TCE)	5	5	20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Tetrachloroethene (PCE)	5	5	240	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	2	2	4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Additional VOCs (µg/L)										
Acetone	6,000	na	na	<10	<10	<10	<10	<10	<10	<10
Benzene	5	na	2,900	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	70	na	na	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloromethane	30	na	na	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	81	na	130	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Methyl Tert-Butyl Ether (MTBE)	13	na	2,600	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Toluene	1,000	na	50,000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,4-Dioxane (µg/L)										
1,4-Dioxane	3	na	na	<2.0	<2.0	**0.41**	<2.0	<2.0	<2.0	**0.20**
Contaminant of Concern										
Cyanide (mg/L)	0.2	0.2	na	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Metals of Concern (mg/L)										
Arsenic	0.01	0.05	na	<0.001	<0.001	<0.001	**0.0026**	**0.0023**	**0.0017**	<0.001
Cadmium	0.005	0.005	na	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001
Chromium	0.1	0.10	na	<0.005	<0.005	<0.005	**0.0135**	**0.0128**	**0.0328**	**0.0142**
Lead	0.015	0.015	na	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	0.84	na	na	**0.124**	**0.019**	**0.014**	<0.010	<0.010	<0.010	<0.010
Nickel	0.10	0.10	na	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
NA - Laboratory										
Methane (µg/L)	na	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Chloride (mg/L)	na	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Sulfate, as SO_4 (mg/L)	500	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Carbon Dioxide (mg/L)	na	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Total Suspended Solids (mg/L)	na	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
NA - Field Screening										
pH (SU)	na	na	na	**5.9**	**6.0**	**6.1**	**12.2**	*ns*	**11.8**	*ns/ir*
ORP (mV)	na	na	na	**194**	**403**	**190**	**-196**	*ns*	**-288**	*ns/ir*
Specific Conductance (µS/cm)	na	na	na	**372**	**380**	**458**	**2,204 J***	*ns*	**1,359**	*ns/ir*
Dissolved Oxygen (mg/L)	na	na	na	**0.9**	**5.8**	**5.0**	**0.6**	*ns*	**2.1**	*ns/ir*
Turbidity (ntu)	na	na	na	<5	<5	<5	<5	*ns*	<5	*ns/ir*
Temperature (°C)	na	na	na	**13**	**14**	**13**	**13**	*ns*	**15**	*ns/ir*

See last page for Notes.

TABLE 3 - SUMMARY OF DETECTED COMPOUNDS - ANNUAL GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

TABLE KEY:
VOCs = Volatile Organic Compounds
AGQS = Ambient Groundwater Quality Standards included in Env-Or 600 - Contaminated Site Management
GW-2 = Groundwater to indoor air screening levels
ROD ICL = Interim Concentration Limits established in the Record of Decision (ROD) for Site groundwater
na = no current standard available
ns = not sampled
ns/1 = well sampled by passive diffusion bag samplers, see Table 6 of the 2010 annual report for data results
ns/g = minimal purge grab 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* = estimated field measurement qualified by GZA due to end of day calibration check issues or failure of parameter to stabilize
Z = estimated concentration qualified by GZA, based on the RPD being outside the acceptance criteria
R = data rejected
"---" = information not readily available at current time
NA = Natural Attenuation
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
^{o}C = degrees Celsius

GENERAL NOTES:
1. Groundwater samples collected in July 2014 were collected using a combination of peristaltic pumps, dedicated T1250 bladder pumps, and non-dedicated SamplePro bladder pumps and dedicated tubing.
2. 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.
3. **Bold** indicates that the concentration was detected above the laboratory reporting detection limit. Shading indicates that the concentration exceeds the AGQS and/or ROD ICL. An underline indicates that the concentration exceeds the GW-2.
4. The analytical test methods for each compound analyzed during 2014 are as follows: VOCs by EPA Method 8260B, 1,4-Dioxane by EPA Method 522, Metals by EPA 200.7/200.8, Cyanide by LACHAT 10-204-00-1-X, Nitrate/Nitrite by Lachat 10-107-04-1-C, Total Organic Carbon by EPA Method 415.3, Chloride and Sulfate by EIASOP-INGIC12, Alkalinity by EIASOP-INGTOTALALKA0, Total Suspended Solids by EIASOP-INGTSS-TDS-VRESS, Carbon Dioxide by EAI method SOP-AM20GAx, Rev. 13, and Methane by EAI method SOP-PM 01C, Rev. 10.
5. The low-flow field screening parameter readings reported represent the last round of readings prior to sample collection.

SPECIFIC NOTES:
1. Wells MW-301 and MW-302 are not sampled by NHDES 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.
2. 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 4
SUMMARY OF MANN-KENDALL ANALYSIS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Parameter	Well Identification	Number of Data Points	Number of Non-detects	Minimum Value	Maximum Value	Mann-Kendall Statistic (S)	Probability	Trend (95% level of Significance)
Trichloroethene	NHP_MW-302S	9	0	3.8	123	18	0.962	Increasing
	NHP_MW-303D	8	0	53	130	-19	0.9884	Decreasing
	NHP_JCMW-2D	9	0	85	115	10	0.821	No Trend
	NHP_MW-108S	8	0	4.8	26	-14	0.946	No Trend
	NHP_MW-204S	7	0	3.3	11	5	0.719	No Trend
	NHP_MW-303S	8	0	2.2	13	10	0.862	No Trend
	NHP_MW-304D	8	0	26	40	9	0.8315	No Trend
	NHP_MW-308S	8	0	1.2	201	10	0.862	No Trend
1,4-dioxane	NHP_JCMW-2D	8	1	1	21	6	0.726	No Trend
	NHP_MW-303D	8	2	1	8.3	-11	0.8865	No Trend
Chloroform	NHP_MW-204S	7	0	5.8	710	-3	0.614	No Trend
Vinyl chloride	NHP_MW-309S	8	5	1	45	16	0.969	Increasing
Cyanide	NHP_MW-308S	8	1	0.01	0.352	-2	0.548	No Trend
Cadmium	NHP_MW-108S	7	0	0.07	0.1607	15	0.985	Increasing
	NHP_MW-309S	8	0	0.0033	0.0744	-22	0.9972	Decreasing
	NHP_MW-303S	8	0	0.2046	1.44	-12	0.911	No Trend
	NHP_MW-301S	8	1	0.0023	0.0354	3	0.594	No Trend
	NHP_MW-304D	8	2	0.001	0.0128	10	0.862	No Trend
	NHP_MW-308S	8	1	0.0009	0.0132	1	0.5	No Trend
	NHP_MW-310S	8	1	0.0009	0.014	0	0.452	No Trend
Nickel	NHP_MW-303S	8	0	0.16	0.596	-16	0.969	Decreasing
	NHP_MW-304D	8	0	0.07	0.514	-16	0.969	Decreasing
Manganese	NHP_JCMW-2D	9	0	1.82	2.61	18	0.962	Increasing
	NHP_MW-308D	8	0	0.22	2.49	22	0.9972	Increasing
	NHP_MW-308S	8	0	0.09	4.54	10	0.862	No Trend
	NHP_MW-310S	8	0	0.2567	4.55	0	0.452	No Trend
Arsenic	NHP_MW-309S	8	1	0.005	0.0445	18	0.984	Increasing
	NHP_JCMW-2D	9	1	0.0042	0.149	8	0.762	No Trend
	NHP_MW-109D	7	1	0.0037	0.0298	-3	0.614	No Trend
	NHP_MW-308R	8	1	0.0104	0.177	6	0.726	No Trend
	NHP_MW-310S	8	1	0.005	0.0243	0	0.452	No Trend

TABLE 5 - SUMMARY OF TOXICITY VALUE CHANGES
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Indicator Compound	Oral Reference Dose (mg/kg-day)		
	1996	Current	
Acetone	0.1	0.9	a
Benzene	NA	0.004	a
Barium	0.07	0.2	a
Beryllium	0.005	0.002	a
Carbon Tetrachloride	0.0007	0.004	a
Chromium (VI)	0.005	0.003	a
Cobalt	0.06	0.0003	b
Cyanide	0.02	0.0006	a
1,1-Dichloroethane	NA	0.2	b
1,1-Dichloroethene	0.009	0.05	a
1,2-Dichloroethane	NA	0.006	d
cis-1,2-Dichloroethene	0.01	0.002	a
Iron	NA	0.7	b
Manganese	0.005 (water) 0.14 (food)	0.14 (diet) 0.024 (non-diet)	a
Methylene Chloride	0.06	0.006	a
Nickel	0.02	0.011	c
Tetrachloroethene	0.01	0.006	a
Thallium	NA	0.00001	d
1,1,1-Trichloroethane	NA	2	a
Trichloroethene	0.006	0.0005	a
Toluene	0.2	0.08	a
Vanadium	0.007	0.005	a
Vinyl Chloride	NA	0.003	a
Total Xylenes	2	0.2	a

Indicator Compound	Oral Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$		
	1990	Current	
Arsenic	1.75	1.5	a
Aroclor 1254	NA	2	a
Benzene	0.029	0.055	a
Beryllium	4.3	NA	na
Carbon Tetrachloride	0.13	0.07	a
Chloroform	0.0061	0.031	c
Chromium (VI)	NA	0.5	e
1,1-Dichloroethane	NA	0.0057	c
1,1-Dichloroethene	0.6	NA	na
Ethylbenzene	NA	0.011	c
Methylene Chloride	0.0075	0.002	a
Methyl-t-butyl ether	NA	0.0018	c
Tetrachloroethene	0.052	0.0021	a
Trichloroethene	NA	0.046	a
Vinyl Chloride	1.9	0.72	a

Notes:

1. Sources of the current toxicity values:
   a. USEPA Integrated Risk Information System (IRIS), http://www.epa.gov/IRIS, September, 2014.
      Toxicity value for cyanide (CN-) was used for cyanide.
      Toxicity value for vanadium pentoxide, factoring out the molecular weight of the oxide ion, was listed for vanadium.
   b. USEPA Provisional Peer Reviewed Toxicity Values for Superfund (PPRTV); current as of September, 2014.
      Subchronic reference dose was used as chronic reference dose for ethylbenzene.
   c. CalEPA. 2009. Hot Spots Unit Risk and Cancer Potency Values.
   d. PPRTV screening value.
   e. New Jersey (2009) Derivation of Ingestion-Based Soil Remediation Criterion for Cr+6 Based on the NTP Chronic Bioassay Data for Sodium Dichromate Dihydrate.
2. Toxcity values used in the 1996 baseline risk assessment were from the 1996 Remedial Investigation Report.
3. The changes of the toxicity values that would result in higher risk results than the 1996 baseline risk results were highlighted.
4. Table 6-1 indicated a RfD of 0.1 mg/kg-day for 1,1-dichloroethane. RfD was presented as "NA" in the risk calculation sheet; therefore, non-cancer risks for 1,1-dichloroethane were not evaluated for groundwater in the 1996 baseline risk assessment.

NA = Not Available

TABLE 8 - SUMMARY OF DETECTED COMPOUNDS IN SEDIMENT SAMPLES
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

		Downstream → Upstream					
Sediment Sample Location	**SQuiRT TEC [1]**	**NHP_SED-202**	**NHP_SED-108**		**NHP_SED-203**	**NHP_SED-204**	**NHP_SED-UPSTRM**
Sampling Event Date		**8/27/13**	**8/27/13**	**8/27/13 DUP**	**8/28/13**	**8/28/13**	**8/28/13**
Sediment Description	na	Brown fine SAND, some Clayey Silt	Brown fine SAND, some Clayey Silt		Brown f-m SAND, trace Silt	Brown fine SAND, little Silt	Brown f-m SAND, little Silt, trace fine Gravel
Cyanide (mg/kg dry)	na	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Metals (mg/kg dry)							
Arsenic	9.79	**2.09**	**1.97**	**2.01**	**1.6**	**1.77**	**2.73 J**
Cadmium	0.99	<0.297	**0.3162**	**0.3016**	<0.309	<0.253	<0.240
Chromium	43.4	**7.07**	**6.21**	**6.49**	**5.88**	**5.93**	**10.6 J**
Chromium (VI)	43.4	<0.56	<0.53	<0.54	<0.55	<0.55	<0.53
Lead	35.8	**6.55**	**6.8**	**5.71**	**4.48**	**5.52**	**7.86**
Manganese	na	**108**	**59.5**	**59.2**	**65**	**68.4**	**69.3**
Nickel	22.7	**4.46**	**4.31**	**4.45**	**6.49**	**3.87**	**3.81**
TPH (DRO) (mg/kg dry)	na	<30.0	<41.0	<28.0	<26.0	<30.0	<29.0
VPH with Targets (mg/kg dry)	na	ND	ND	ND	ND	ND	ND
EPH and Targets (mg/kg dry)							
Fluoranthene	0.423	**0.1**	<0.1	<0.1	**0.1**	<0.1	**0.1**
Pyrene	0.195	**0.1**	<0.1	<0.1	**0.1**	<0.1	**0.1**
benzo(b)fluoranthene	na	<0.1	<0.1	<0.1	<0.1	<0.1	**0.1**
Total Organic Carbon (mg/kg dry)	na	**7,000**	**7,500**	**7,100**	**3,000**	**5,700**	**8,000**
AVS/SEM (mmol/kg)							
Sulfide, Acid Volatile	na	<0.176	**1.67**	**1.93**	**0.533**	**0.439**	<0.099
Cadmium	na	**0.001084**	**0.002745**	**0.002865**	**0.000769**	**0.000996**	**0.001186**
Copper	na	**0.034701**	**0.048238**	**0.048012**	**0.039012**	**0.038443**	**0.037141**
Lead	na	<0.02719	<0.02811	<0.02737	<0.02606	<0.02405	**0.024512**
Nickel	na	<0.00959	**0.034075**	**0.034078**	**0.050477**	**0.025121**	**0.014459**
Zinc	na	**0.225174**	**0.363095**	**0.329281**	**0.254744**	**0.297107**	**0.222402**
SEM/AVS Ratio	na	ND	**0.282596**	**0.227037**	**0.679360**	**0.876278**	ND

TABLE KEY:

f-m = fine to medium
TPH(DRO) = Total Petroleum Hydrocarbons (Diesel Range Organics)
VPH = Volatile Petroleum Hydrocarbons
EPH = Extractable Petroleum Hydrocarbons
AVS/SEM = Acid Volatile Sulfides / Simultaneously Extracted Metals
na = no current standard available
ND = Not detected at the reporting limit for the sample
< = analyte not detected above the laboratory reporting limit
mg/kg dry = milligrams per kilogram of dry weight
mmol/kg = millimoles per kilogram
J = estimated concentration qualified by the laboratory (NHDPHS), see laboratory report for explanation

GENERAL NOTES:

1. 2013 sediment samples were collected by GZA on the dates indicated within the depth range of zero to four inches below the top of sediment.
2. The analytical test methods for each compound are as follows: Metals by EPA 200.7/200.8; TPH by EPA Method 8015 DRO; VPH by MASS DEP 04.1.1; EPH by MA EPH 04.1.1; Cyanide by Method 9010/9014; Chromium (IV) by Method SW3060A7196A; and TOC by SW846 9060.
3. **Bold** indicates that the concentration was detected above the laboratory reporting detection limit. Shading indicates that the concentration exceeds the SQuiRT TEC. There are no ROD Interim Cleanup Goals established for sediment.

SPECIFIC NOTES:

1. Buchman, M.F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration. "TEC" is Threshold Effect Concentration, which is consensus-based and incorporates the Ontario Ministry of the Environment lowest-observed effect levels (LELs) (Persaud et al. 1993) as well as data from up to five other sediment quality guidelines (when available), including: threshold effects levels (TELs) (Smith et al. 1996); effects range-low (ER-L) values (Long and Morgan 1991); threshold effect levels for Hyalella azteca in 28 day tests (TEL-HA28) (U.S.EPA 1996a; Ingersoll et al. 1996); minimal effect thresholds (MET) from EC and MENVIQ (1992); and chronic equilibrium partitioning thresholds (SQAL) (Bolton et al. 1985; Zarba 1992; U.S.EPA 1997a).

TABLE 9 - SUMMARY OF DETECTED COMPOUNDS IN SURFACE WATER SAMPLES
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Surface Water Sample Location ID	NH SWQC [1]	Downstream → Upstream					
		NHP_SW-202	NHP_SW-108		NHP_SW-203	NHP_SW-204	NHP_SW-UPSTRM
Sampling Event Date		8/27/13	8/27/13	8/27/2013 DUP	8/28/13	8/28/13	8/28/13
Contaminant of Concern							
Cyanide (mg/L)	0.0052 [2]	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Metals of Concern (mg/L)							
Arsenic	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	0.0008 [2]	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001
Chromium	0.024	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Lead	0.00054 [2]	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	na	**0.03**	**0.029**	**0.03**	**0.032**	**0.032**	**0.03**
Nickel	0.0161	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
NA Parameters - Lab							
Hardness (mg/L)	na	**20.88**	**20.02**	**20.25**	**20.05**	**20.23**	**20.48**
NA Parameters - Field							
Dissolved Oxygen (mg/L)	>5 [3]	**11.7**	**12.8**	*ns*	**8.1**	**8.4**	**8.5**
Temperature (°C)	na	**24**	**24**	*ns*	**24**	**25**	**24**

TABLE KEY:
SWQC = Water Quality Criteria for Toxic Substances included in Env-Wq 1700 - Surface Water Quality Regulations
na = no current standard available
ns = not sampled
< = analyte not detected above the laboratory reporting limit
NA = Natural Attenuation
mg/L = milligrams per Liter
^{o}C = degrees Celsius

GENERAL NOTES:
1. 2013 surface water samples, co-located with pore water and sediment samples, were collected by GZA on the dates indicated.
2. The analytical test methods for each compound as follows: Metals and Hardness by EPA 200.7/200.8 and Cyanide by LACHAT 10-204-00-1-X.
3. **Bold** indicates that the concentration was detected above the laboratory reporting detection limit. Shading indicates that the concentration exceeds the SWQC.

SPECIFIC NOTES:
1. SWQC standards assume the Protection of Aquatic Life in Freshwaters with chronic criteria. If a chronic criteria standard has not been established, GZA used the Freshwater Acute Criteria. There are no ROD Interim Cleanup Goals established for surface water.
2. The laboratory could not achieve the SWQC for these compounds.
3. The standard for dissolved oxygen in surface waters is from Env-Wq 1703.07 (b) Dissolved oxygen in class B waters included in the New Hampshire Code of Administrative Rules Env-Wq 1700 Surface Water Quality Regulations

TABLE 13 - WELL LOCATION AND CONSTRUCTION INFORMATION
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Well Identification	Well Diameter (inches)	Aquifer Well is Screened	Well Location & Sample Rationale		Measuring Reference Point		Reported Well Construction Information					Historic Low Water Levels [1]	Sampling Intake		
			Property Well is Associated With	Sample Rationale	Location (TOC / TOPVC)	Elevation (ft-NGVD)	Reported Well Depth (ft bmp)	Measured Well Depth [10] (ft bmp)	Depth to Top of Screen (ft bmp)	Screen Bottom (ft bmp)	Screen /Open Borehole Length (ft)	(ft bmp)	Saturated Screen (ft bmp)	Partially Saturated [2] Depth to Intake (ft bmp)	Partially Saturated [2] Height of Intake from Well Bottom (ft)
NHP_JCPROD-1	6	Bedrock	Jones Chemical	Production well	N/A [3]	N/A	N/A	est. 350-380	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NHP_JCMW-2S	2	Shallow	Jones Chemical	Downgradient	TOPVC	123.37	22.6	22.4	12.6	22.6	10	18.04	--	20.3	2.3
NHP_JCMW-2D	2	Deep	Jones Chemical	Downgradient	TOPVC	122.77	49.5	48.3	39.5	49.5	10	20.30	44.5	--	--
NHP_JCMW-4S	2	Shallow	Jones Chemical	Downgradient	TOPVC	124.85	22.65	22.2	12.65	22.65	10	18.84	--	20.7	1.9
NHP_JCMW-4D	2	Deep	Jones Chemical	Downgradient	TOPVC	124.03	47.25	46.3	37.25	47.25	10	19.41	42.25	--	--
NHP_JCMW-6	2	Shallow	Jones Chemical	Downgradient	TOPVC	121.68	25.72	24.8	10.72	25.72	**15**	19.76	--	22.6	1.37
NHP_MW-102S	2	Shallow	NHP Site	Upgradient	TOPVC	130.54	33.6	32.5 [11]	13.6	33.6	**20**	25.39	--	29.5	4.1
NHP_MW-102D	2	Deep	NHP Site	Upgradient	TOPVC	130.16	65.5	63.4 [11]	45.5	65.5	**20**	25.14	47.4 [5]	--	--
NHP_MW-102R	6	Bedrock	NHP Site	Upgradient	TOC	130.13	262.4	263.8 [11]	80.4	262.4	**182**	32.99	171.4	--	--
NHP_MW-106	2	Deep	YMCA Property	Sentry	TOPVC	117.69	97.8	98.5	62.8	97.8	**35**	18.44	80.3	--	--
NHP_MW-106R	6	Bedrock	YMCA Property	Sentry	TOC	117.67	202.7	203.3	120.7	202.7	**82**	18.02	161.7	--	--
NHP_B-10S	1.5	Shallow	YMCA Property	Sentry	TOC	119.26	28.54	27.4	8.4	28.4	**20**	19.81	--	24.1	4.3
NHP_MW-108S	2	Shallow	J&S Patterson	Downgradient	TOPVC	123.79	32.7	33.5 [11]	17.7	32.7	**15**	27.48	--	30.1	2.6
NHP_MW-108D	2	Deep	J&S Patterson	Downgradient	TOPVC	123.57	85	85.8 [11]	50	85	**35**	24.34	67.5	--	--
NHP_MW-109S	2	Shallow	New England Pole	Sentry	TOPVC	124.71	37.8	37.8 [11]	17.8	37.8	**20**	30.02	--	33.9	3.9
NHP_MW-109D	2	Deep	New England Pole	Sentry	TOPVC	124.55	78.6	75.2 [11]	58.6	78.6	**20**	29.55	68.6	--	--
NHP_MW-109R	6	Bedrock	New England Pole	Sentry	TOC	123.65	263.6	166.0 [6, 11]	100.6	263.6	**163**	28.37	161 [6]	--	--
NHP_MW-202S [4]	2	Shallow	New England Pole	Cross-gradient	TOPVC	123.34	37.2	36.7	22.2	37.2	**15**	29.60	--	33.4	3.8
NHP_MW-202D	2	Deep	New England Pole	Cross-gradient	TOPVC	123.80	66.58	66.8 [11]	56.58	66.58	10	29.10	61.6	--	--
NHP_MW-203S [9]	2	Shallow	Windsor Construction	Downgradient	TOPVC	126.01	34.08	25.9	24.08	34.08	10	26.83	--	30.5	3.6
NHP_MW-203D	2	Deep	Windsor Construction	Downgradient	TOPVC	126.00	72.8	73.3 [11]	60.83	72.8	**12**	29.05	66.8	--	--
NHP_MW-204S	2	Shallow	GI Stone/Techwood	Downgradient	TOPVC	123.01	37.6	38.0 [11]	22.6	37.6	**15**	23.16	--	30.4	7.2
NHP_MW-204D	2	Deep	GI Stone/Techwood	Downgradient	TOPVC	123.44	59.3	58.8 [11]	49.27	59.3	10	26.40	54.3	--	--
NHP_MW-204R	2	Bedrock	GI Stone/Techwood	Downgradient	TOPVC	123.21	82.8	83.7 [11]	72.83	82.8	10	26.17	77.8	--	--
NHP_MW-301S	2	Shallow	YMCA Property	Sentry	TOPVC	116.60	26.6	25.9	16.6	26.6	10	16.27	21.6	--	--
NHP_MW-301D	2	Deep	YMCA Property	Sentry	TOPVC	116.47	49.5	49.5	39.5	49.5	10	16.25	44.5	--	--
NHP_MW-302S	2	Shallow	NHP Site	Cross-gradient	TOPVC	117.87	24.1	23.9	14.1	24.1	10	17.63	--	20.9	3.2
NHP_MW-302D	2	Deep	NHP Site	Cross-gradient	TOPVC	117.99	66.5	64.9	56.5	66.5	10	17.58	61.5	--	--
NHP_MW-303S	2	Shallow	NHP Site	Cross-gradient	TOPVC	116.43	24.3	24.1	14.3	24.3	10	12.07	19.3	--	--
NHP_MW-303D	2	Deep	NHP Site	Cross-gradient	TOPVC	116.31	60.2	60.0	50.2	60.2	10	14.50	55.2	--	--
NHP_MW-304S	2	Shallow	NHP Site	Cross-gradient	TOPVC	118.52	24.8	25.1	14.8	24.8	10	14.07	19.8	--	--
NHP_MW-304D	2	Deep	NHP Site	Cross-gradient	TOPVC	118.45	50.6	50.4	40.6	50.6	10	15.10	45.6	--	--
NHP_MW-305S	2	Shallow	NHP Site	Upgradient	TOPVC	117.94	26.8	26.7	16.8	26.8	10	13.62	21.8	--	--
NHP_MW-305D	2	Deep	NHP Site	Upgradient	TOPVC	118.07	55.7	54.3	45.7	55.7	10	13.81	50.7	--	--
NHP_MW-306S	2	Shallow	YMCA Property	Sentry	TOPVC	111.70	19.7	19.1	9.7	19.7	10	13.60	--	16.7	3.1
NHP_MW-306D	2	Deep	YMCA Property	Sentry	TOPVC	111.65	38.8	38.0	28.8	38.8	10	13.56	33.8	--	--
NHP_MW-307S	2	Shallow	YMCA Property	Downgradient	TOPVC	117.05	27.7	27.3	17.7	27.7	10	19.72	--	23.7	4.0
NHP_MW-307D	2	Deep	YMCA Property	Downgradient	TOPVC	117.15	68.8	67.5	58.8	68.8	10	17.56	63.8	--	--
NHP_MW-308S	2	Shallow	NHP Site	Downgradient	TOPVC	120.47	26.3	26.0	16.3	26.3	10	21.62	--	24.0	2.3
NHP_MW-308D	2	Deep	NHP Site	Downgradient	TOPVC	120.78	85.5	83.3	75.5	85.5	10	21.40	80.5	--	--
NHP_MW-308R	2	Bedrock	NHP Site	Downgradient	TOPVC	121.05	159.6	157.9	144.6	159.6	**15**	20.69	152.1	--	--
NHP_MW-309S	2	Shallow	NHP Site	Source	TOPVC	119.10	20.5	20.8	10.5	20.5	10	16.37	--	18.4	2.1
NHP_MW-309D	2	Deep	NHP Site	Source	TOPVC	119.61	69.9	69.3	59.9	69.9	10	18.09	64.9	--	--
NHP_MW-309R	2	Bedrock	NHP Site	Source	TOPVC	119.64	150.7	143.8	135.7	150.7	**15**	18.42	143.2	--	--

TABLE 13 - WELL LOCATION AND CONSTRUCTION INFORMATION
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

Well Identification	Well Diameter (inches)	Aquifer Well is Screened	Well Location & Sample Rationale		Measuring Reference Point		Reported Well Construction Information					Historic Low Water Levels [1]	Sampling Intake		
			Property Well is Associated With	Sample Rationale	Location (TOC / TOPVC)	Elevation (ft-NGVD)	Reported Well Depth (ft bmp)	Measured Well Depth [10] (ft bmp)	Depth to Top of Screen (ft bmp)	Screen Bottom (ft bmp)	Screen /Open Borehole Length (ft)	(ft bmp)	Saturated Screen (ft bmp)	Partially Saturated [2] Depth to Intake (ft bmp)	Partially Saturated [2] Height of Intake from Well Bottom (ft)
NHP_MW-310S	2	Shallow	NHP Site	Source	TOPVC	123.09	23.8	23.7	13.8	23.8	10	19.52	--	21.7	2.1
NHP_MW-310D	2	Deep	NHP Site	Source	TOPVC	122.59	68.8	69.3	58.8	68.8	10	20.36	63.8	--	--
NHP_MW-311S	2	Shallow	NHP Site	Source	TOPVC	123.91	19.5	19.9	9.5	19.5	10	18.57	--	19.0	0.5
NHP_MW-311D	2	Deep	NHP Site	Source	TOPVC	124.33	65.9	60.1	55.9	65.9	10	21.80	60.9	--	--
NHP_MW-312S	2	Shallow	NHP Site	Sentry	TOPVC	119.89	21.6	21.6	11.6	21.6	10	14.67	--	18.1	3.5
NHP_MW-312D	2	Deep	NHP Site	Sentry	TOPVC	119.94	49.5	49.5	39.5	49.5	10	15.76	44.5	--	--
NHP_MW-208S	Decommissioned during September 2014 [12]														
NHP_MW-208D															
NHP_MW-208R															
NHP_MW-400R	4	Bedrock	Acme	Sentry	TOC	116.26	201.69	201.9	55	201.69	146.69	14.70	163.1 [8]	--	--
NHP_MW-401S	2	Shallow	Acme	Sentry	TOPVC	120.22	27.80	27.6	22.8	27.8	5	16.83	25.3	--	--
NHP_MW-401D	2	Deep	Acme	Sentry	TOPVC	119.74	47.60	47.4	37.60	47.60	10	16.58	42.6	--	--
NHP_MW-402D	2	Deep	NHP Site	Source	TOPVC	119.57	47.65	47.1	37.65	47.65	10	16.31	42.7	--	--

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

GENERAL NOTES:
1. 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.

SPECIFIC NOTES:
1. Historic 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 indicated that some of the wells 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.
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 sampling intake is not the midpoint of borehole, the intake location is similar to NHP_MW-106R.
9. Due to an obstruction at approximately 26 feet below ground surface at NHP_MW-203S, this well will not be sampled until replaced by NHP_MW-203SX. Due to site access concerns, the well could not be replaced as planned during 2014.
10. Well Depths were measured during the July 14, 2014 comprehensive water level round. Wells with significantly different well depths from reported were remeasured during the groundwater sampling and transducer installation activities.
11. These wells have dedicated bladder pumps installed; therefore, well bottom measurements could not be made during 2014. The well bottom measurements are from 2010.
12. The Island Drive wells (NHP_MW-208 series) and Litchfield wells (NHP_LW-1/1B and NHP_LW-2) were decommissioned by GZA's subcontractor, New England Boring Contractors, on September 24, 2014.

APPENDIX D

COMMUNITY NOTIFICATION

News Releases from Region 1

EPA Will Review 27 Superfund Site Clean Ups This Year

Release Date: 02/13/2014
Contact Information: Emily Zimmerman, 617-918-1037

Boston, Mass. – (February 13, 2014) – EPA will review site clean ups and remedies at 27 Superfund Sites across New England this year by doing routine Five-Year Reviews at each site.

EPA conducts evaluations every five years on previously-completed clean up and remediation work performed at Superfund sites and Federal Facilities listed on the "National Priorities List" (aka Superfund sites) to determine whether the implemented remedies at the sites continue to be protective of human health and the environment. Further, five year review evaluations identify any deficiencies to the previous work and, if called for, recommend action(s) necessary to address them.

In addition to a careful evaluation of technical work at the sites, during the Five Year Review process EPA also provides the public with an opportunity to evaluate preliminary findings and to provide input on potential follow up activity that may be required following the review process.

The Superfund Sites at which EPA is performing Five Year Reviews over the following several months include the following sites. Please note, the Web link provided after each site provides detailed information on site status and past assessment and cleanup activity.

Connecticut
Linemaster, Woodstock, CT
http://www.epa.gov/region1/superfund/sites/linemaster

Nutmeg Valley, Wolcott, CT
http://www.epa.gov/region1/superfund/sites/nutmeg

Maine
Saco Tannery Waste Pits, Saco
http://www.epa.gov/region1/superfund/sites/sacotannery

Massachusetts

Nyanza Chemical Waste Dump, Ashland
http://www.epa.gov/region1/superfund/sites/nyanza

Baird & McGuire, Holbrook
http://www.epa.gov/region1/superfund/sites/baird

Hatheway & Patterson, Mansfield
http://www.epa.gov/region1/superfund/sites/hatheway

Hocomonco Pond, Westborough
http://www.epa.gov/region1/superfund/sites/hocomonco

Rose Disposal, Lanesborough
http://www.epa.gov/region1/superfund/sites/ftrose

Silresim, Lowell
http://www.epa.gov/region1/superfund/sites/silresim

W.R. Grace, Acton
http://www.epa.gov/region1/superfund/sites/graceacton

Wells G&H, Woburn
http://www.epa.gov/region1/superfund/sites/wellsgh

Norwood PCBs, Norwood
http://www.epa.gov/region1/superfund/sites/norwood

South Weymouth Naval, Weymouth, MA
http://www.epa.gov/region1/superfund/sites/sweymouth

New Hampshire

Ottati & Goss, Kingston
http://www.epa.gov/region1/superfund/sites/og

Tinkham Garage, Londonderry
http://www.epa.gov/region1/superfund/sites/tinkham

Sylvester, Hillsborough County
http://www.epa.gov/region1/superfund/sites/sylvester

Town Garage/Radio Beacon, Rockingham
http://www.epa.gov/region1/superfund/sites/towngarage

New Hampshire Plating, Hillsborough County
http://www.epa.gov/region1/superfund/sites/nhplating

Pease Air Force Base, Portsmouth, Newington and Greenland, NH
http://www.epa.gov/region1/superfund/sites/pease

Rhode Island

Landfill Resource & Recovery, North Smithfield
http://www.epa.gov/region1/superfund/sites/lrr

Vermont
Elizabeth Mine, Strafford
http://www.epa.gov/region1/superfund/sites/elizmine

Parker Sanitary Landfill, Lyndonville
http://www.epa.gov/region1/superfund/sites/parker

Pownal, North Pownal
http://www.epa.gov/region1/superfund/sites/pownal

Bennington Municipal Landfill, Bennington
http://www.epa.gov/region1/superfund/sites/bennington

BFI Sanitary Landfill, Rockingham
http://www.epa.gov/region1/superfund/sites/bfi

Tansitor Electronics, Inc, Bennington County
http://www.epa.gov/region1/superfund/sites/tansitor

Pine Street Canal, Burlington
http://www.epa.gov/region1/superfund/sites/pinestreet

APPENDIX E

INTERVIEW FORMS

Site Name – New Hampshire Plating Company EPA ID No. NHD001091453
Subject: Five Year Review (2nd) – Visit Interviewer: Rodney Elliott
Individual Contacted Paul Macali, Acting Town Manager
Date: October 21, 2014 - Town Hall
Summary of Conversation

1.) What is your overall impression of the project and Site?
Answer: The site is currently at a standstill. There has been some discussion between EPA and the Town of Merrimack on taking over the site, but the Town is not interested at this point in taking over the site. Their original plan was to develop the Site into athletic fields until learning about the need for second means of evacuation due to chlorine storage facility.

2.) Are you aware of any issues the five-year review should focus on?
Answer: Not at this time.

3.) Who should EPA speak to in the community to solicit local input?
Answer: the Towns' Community Development Director

4.) Is the remedy functioning as expected?
Answer: yes

5.) Is the Town actively involved in the Site or do they show an active interest?
Answer: No. The Town is not interested in the Site, since the concern was raised that it cannot be redeveloped into athletic fields because of the company that distributes chlorine and the effect that would have on evacuating the fields in the event of a leak.

6.) Do you have any comments or suggestion regarding the Site's management or operation?
Answer: No. Property is fenced and property gated.

7.) Are you aware of any community concerns regarding the Site or its operation and administration?
Answer: no

8.) Have here been any changes in the Site or surrounding property in the last 5 years, or are changes planned?

Answer: No changes in Site in last five year. There has been some discussion about adult housing on the opposite side of site.

9.) Has there been any unusual or unexpected activity at the Site?
Answer: None

10.) Have there been any complaints or incidents that require a response by your office?
Answer: None.

Site Name – **New Hampshire Plating Company** EPA ID No. NHD001091453
Subject: Five Year Review (2nd) – Interview Interviewer: Rodney Elliott, EPA
Individual Contacted: Adam Jacobson,
Date: October 21, 2014 - Town Hall

1.) What is your overall impression of the project and Site?
Answer: No issues with site.

2.) Are you aware of any issues the five-year review should focus on?
Answer: Need to update deed with restrictions including abutting properties.
- Drainage concern by a butter, temporary drainage put in by Jones Chemical/ACME Washing.

3.) Who should EPA speak to in the community to solicit local input?
Answer: the Towns' Community Development Director

4.) Is the remedy functioning as expected?
Answer: yes

5.) Is the Town actively involved in the Site or do they show an active interest?
Answer:

6.) Do you have any comments or suggestion regarding the Site's management or operation?
Answer: No.

7.) Are you aware of any community concerns regarding the Site or its operation and administration?
Answer: no. Overall impression is good. No concerns.

8.) Have here been any changes in the Site or surrounding property in the last 5 years, or are changes planned?

Answer: No. Nothing has been done on the Site. Proposed changes to one adjacent parcel for housing.

9.) Has there been any unusual or unexpected activity at the Site?
Answer: None

10.) Have there been any complaints or incidents that require a response by your office?
Answer: No complaints.

Site Name – **New Hampshire Plating Company** EPA ID No. NHD001091453

Subject: Five Year Review (2nd) –Interview Interviewer: Rodney Elliott, EPA

Individual Contacted: Tim Thompson, Community Development Director

Date: October 21, 2014 - Town Hall

1.) What is your overall impression of the project and Site?
Answer: Nothing has changed since he took over. No activity

2.) Are you aware of any issues the five-year review should focus on?
Answer: None

3.) Who should EPA speak to in the community to solicit local input?
Answer: the Towns' Community Development Director

4.) Is the remedy functioning as expected?
Answer: As far as I know.

5.) Is the Town actively involved in the Site or do they show an active interest?
Answer: If there is future site re-development proposal, the Town of Merrimack should be involved in discussion

6.) Do you have any comments or suggestion regarding the Site's management or operation?
Answer: No.

7.) Are you aware of any community concerns regarding the Site or its operation and administration?
Answer: no complications that I am aware of.

8.) Have here been any changes in the Site or surrounding property in the last 5 years, or are changes planned?

Answer: No. Nothing has been done on the Site. Proposed changes to one adjacent parcel, to be developed for housing.

9.) Has there been any unusual or unexpected activity at the Site?
Answer: No

10.) Have there been any complaints or incidents that require a response by your office?
Answer: No

Site Name – New Hampshire Plating Company EPA ID No. NHD001091453
Subject: Five Year Review (2nd) – Interview Interviewer: Rodney Elliott
Name: Chris Ross– Owner, Synergy Self Storage
Date: November 25, 2014 – Location: Synergy Self Storage

1.) What is your overall impression of the project and Site?
Answer: capped part of the site is fine; drainage is a problem. Gradient of the slope is constructed incorrectly and in wrong direction and run-off water drains to corner of his property

2.) Are you aware of any issues the five-year review should focus on?
Answer: Fix the drainage. All the water from the Site is going onto his property and into his "natural pond".

3.) Who should EPA speak to in the community to solicit local input?
Himself – (Chris Rolling – builder)

4.) Is the remedy functioning as expected?
Answer: Yes, as far as he can tell

5.) Is the Town actively involved in the Site or do they show an active interest?
Answer: no

6.) Do you have any comments or suggestion regarding the Site's management or operation?
Answer: They have to call to get grass and trees cut regularly, otherwise it goes unkempt.

7.) Are you aware of any community concerns regarding the Site or its operation and administration?
Answer: no

8.) Have here been any changes in the Site or surrounding property in the last 5 years, or are changes planned?
Answer: Not that he is aware of

9.) Has there been any unusual or unexpected activity at the Site?
Answer: none

10.) Have there been any complaints or incidents that require a response by your office?
Answer: none

Site Name – New Hampshire Plating Company
Subject: Five Year Review (2nd) – Interview
Name: ACME Washing - Lionel Greenwood
Date: November 20, 2014 - On Site – ACME Wright Street

EPA ID No. NHD001091453
Interviewer: Rodney Elliott
Location: On-Site

1.) What is your overall impression of the project and Site?

Answer: "Because of the two foot elevated height of the cap, all the stormwater runoff from the Site goes onto owner's property, creating a flood; usually up to six inches of water. EPA officials have visited the site recently and saw all the water on property. As a result, owner has to pump to drain building regularly.

2.) Are you aware of any issues the five-year review should focus on?
Provide drainage so property doesn't flood. Has to use sump pump. 3 inches of water in office and garage area. He would like to have a 12 inch drainage pipe installed. He had representatives from EPA on site during a rainstorm that showed the effects of the flooding.

3.) Who should EPA speak to in the community to solicit local input?
Chris Ross – abutter of Storage Company. Has similar flooding problems. Town of Merrimack to address stormwater run-off from Wright Street

4.) Is the remedy functioning as expected?

Answer: it appears so, except for flooding onto his property. Again, he had to install a 6 inch drainage pipe next to the rear of his property in order to prevent flooding inside his garage and it still floods. He would like a 12" pipe installed and deeper ditch to drain into

5.) Is the Town actively involved in the Site or do they show an active interest?
No. Reiterated concern with stormwater that comes from top of Wright Street and all run-off is channeled onto his property; Town needs to fix drainage at top of hill.

6.) Do you have any comments or suggestion regarding the Site's management or operation?

Answer: Would like to have the trees along the fence line cut off fence, to make it more presentable. Trees also encroach onto his property and limbs are causing access problems to the back of his property.

7.) Are you aware of any community concerns regarding the Site or its operation and administration?
Answer: No

8.) Have there been any changes in the Site or surrounding property in the last 5 years, or are changes planned?
Answer: No

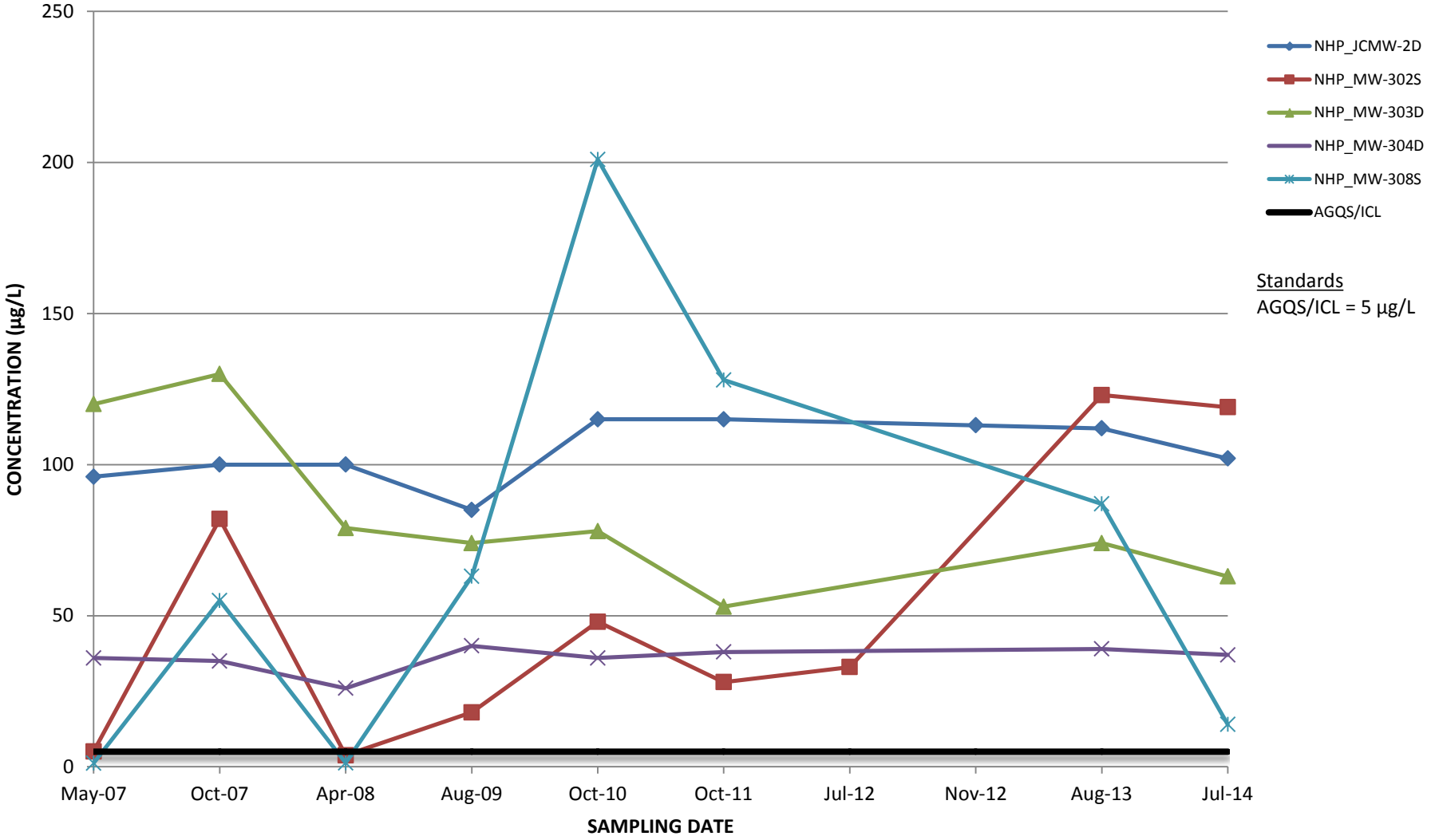
9.) Has there been any unusual or unexpected activity at the Site?
Answer: not that he is aware of

10.) Have there been any complaints or incidents that require a response by your office?
Answer: No

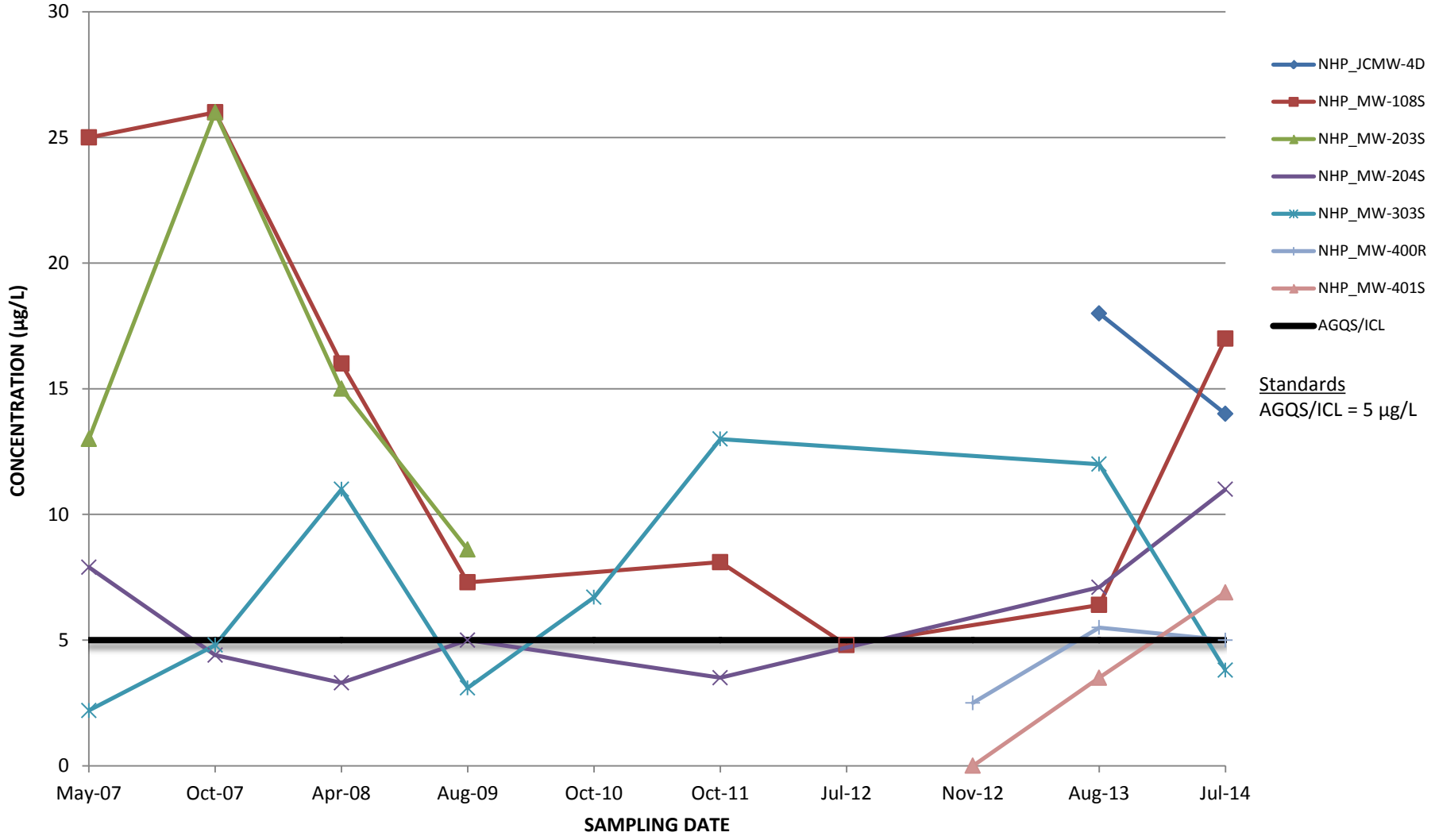
APPENDIX F

TEMPORAL CONCENTRATION TREND GRAPHS

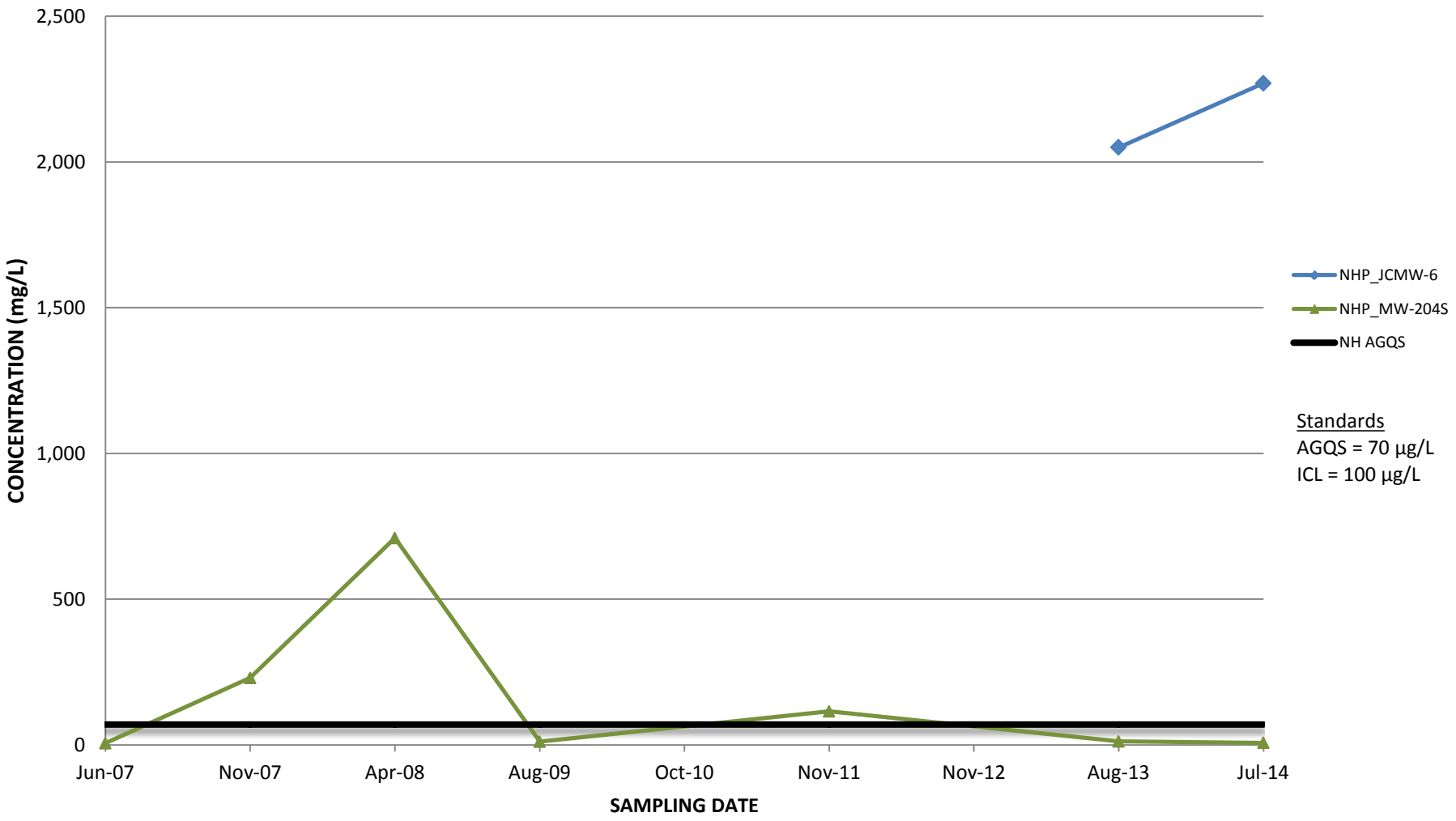
Graph 1A
Trichloroethene (TCE) Concentration Trends Exceeding AGQS/ROD ICL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire



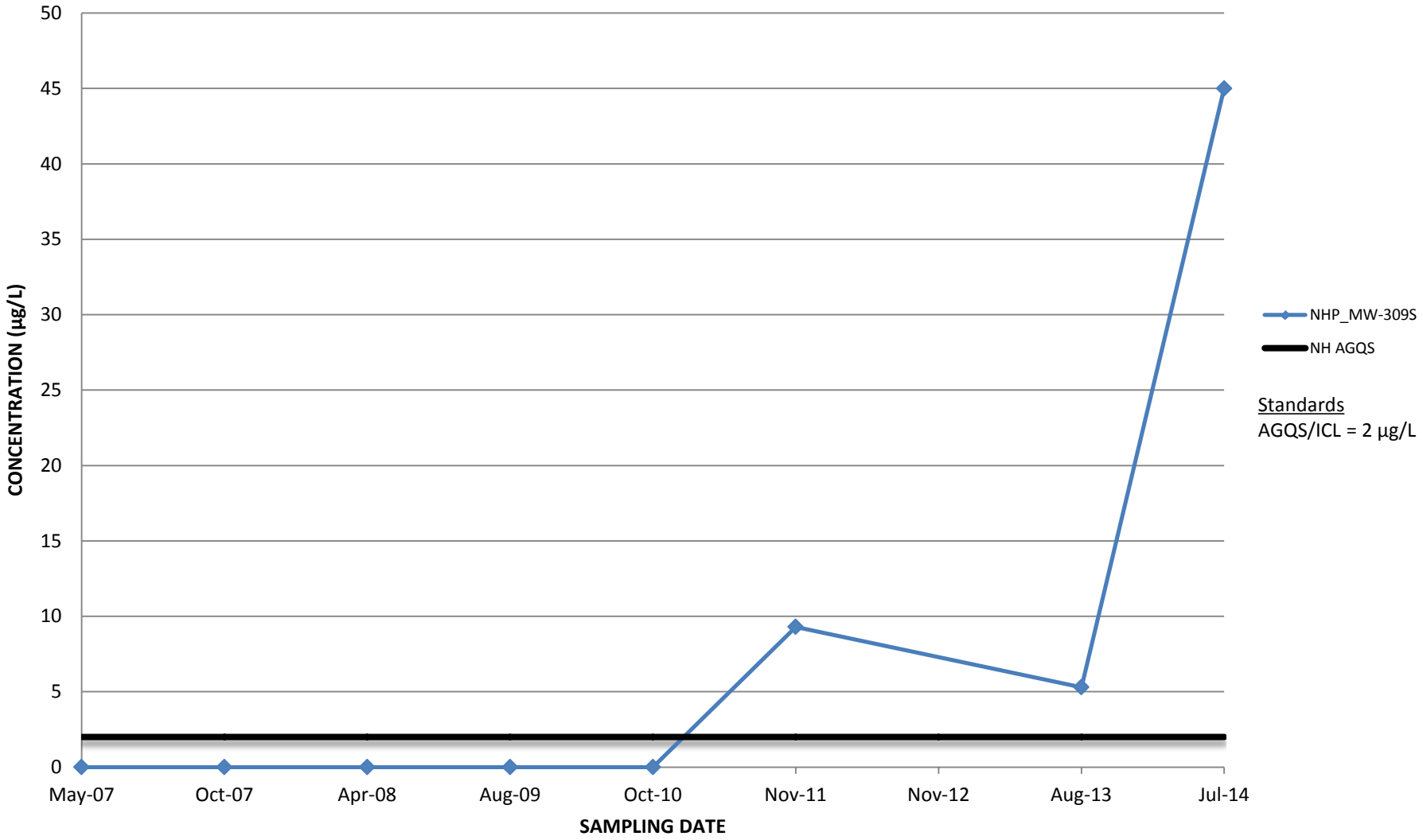
Graph 1B
Trichloroethene (TCE) Concentration Trends Exceeding AGQS/ROD ICL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire



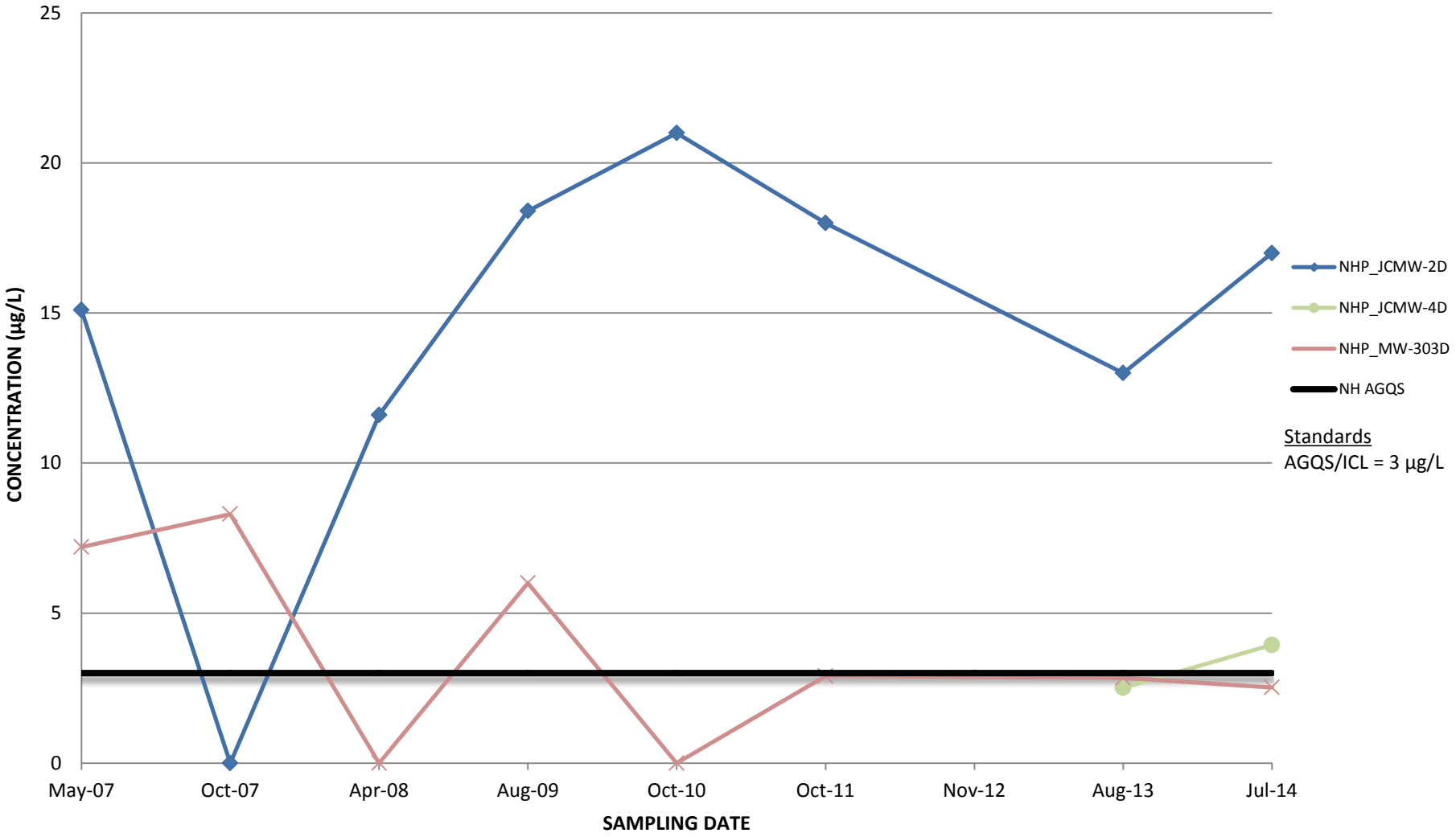
Graph 2
Chloroform (Trichloromethane) Concentration Trends Exceeding AGQS/ROD ICL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire



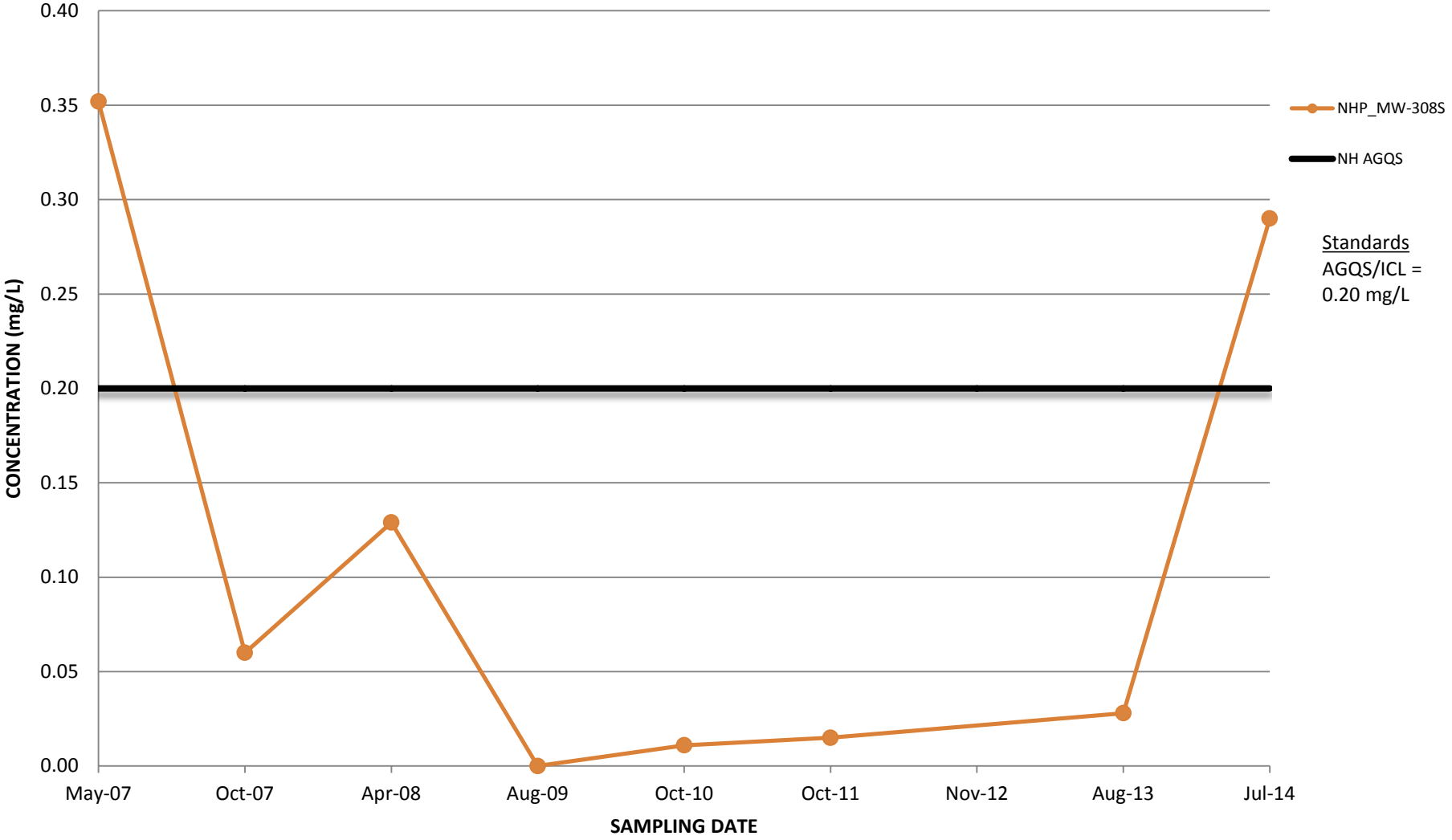
Graph 3
Vinyl Chloride (VC) Concentration Trends Exceeding AGQS/ROD ICL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire



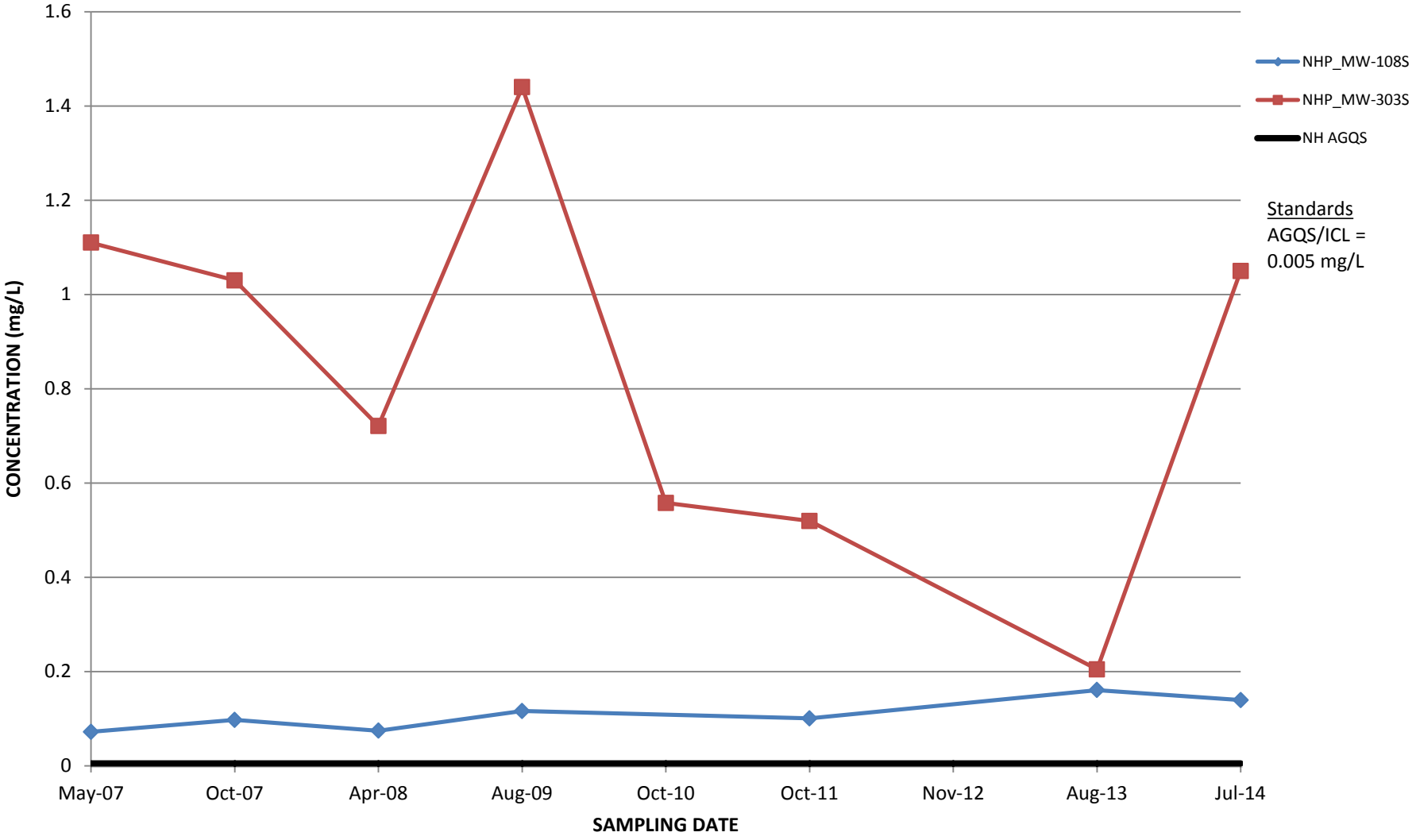
Graph 4
1,4-Dioxane Concentration Trends Exceeding AGQS/ROD ICL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire



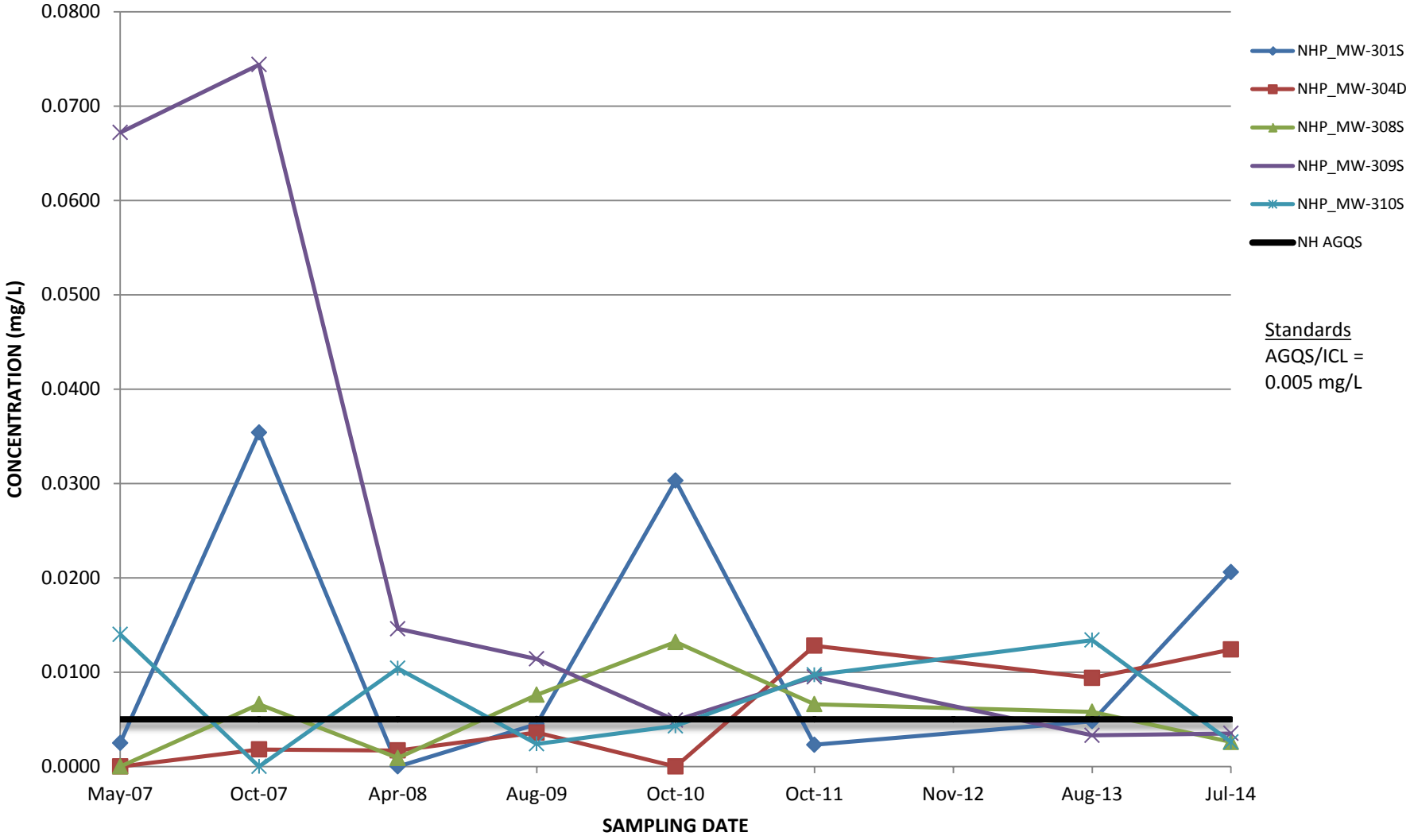
Graph 5
Cyanide Concentration Trends Exceeding AGQS/ROD ICL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire



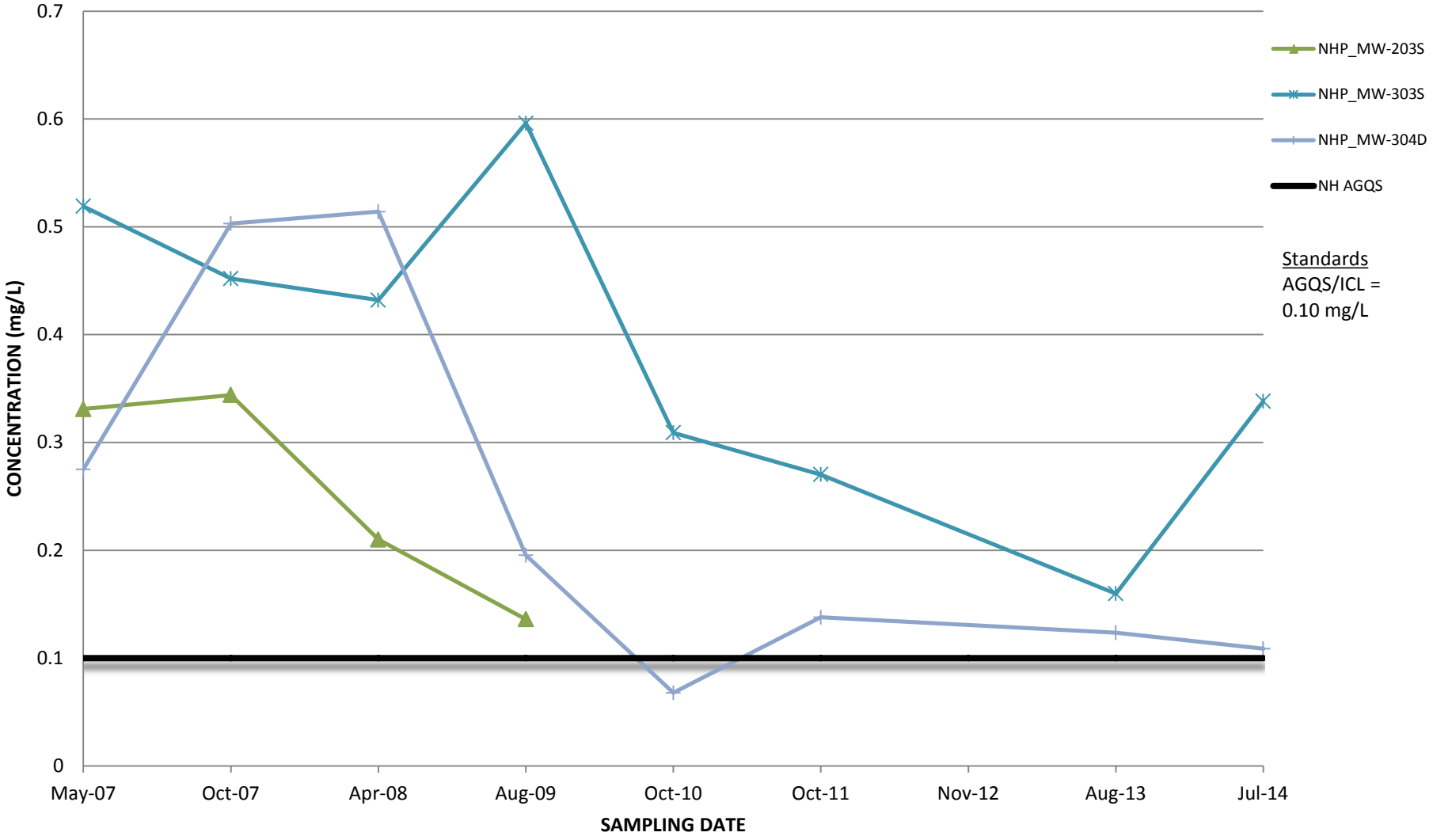
Graph 6A
Cadmium (Cd) Concentration Trends Exceeding AGQS/ROD ICL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire



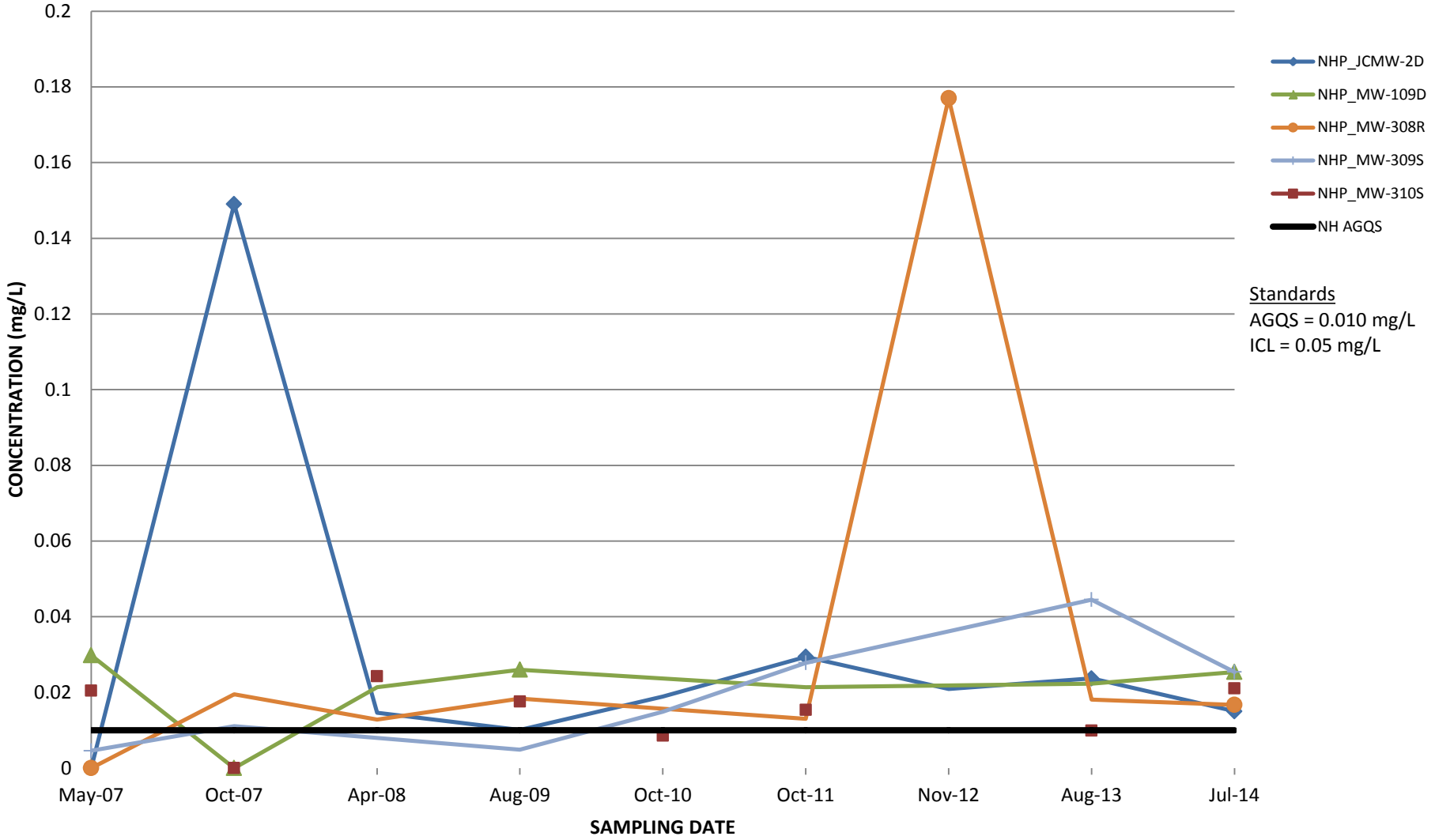
Graph 6B
Cadmium (Cd) Concentration Trends Exceeding AGQS/ROD ICL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire



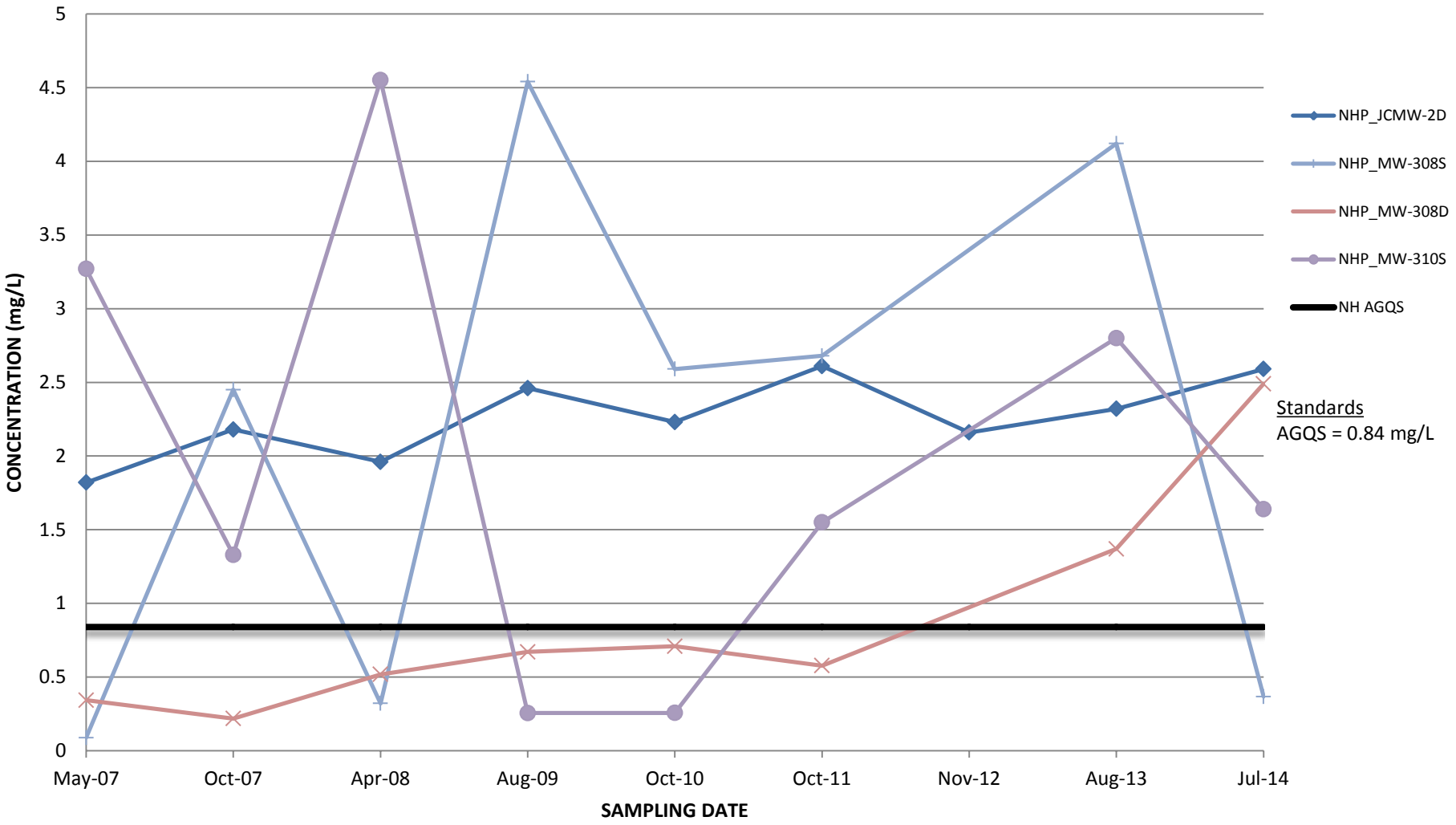
Graph 7
Nickel (Ni) Concentration Trends Exceeding AGQS/ROD ICL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire



Graph 8
Arsenic (As) Concentration Trends Exceeding AGQS/ROD ICL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire



Graph 9
Manganese (Mn) Concentration Trends Exceeding AGQS/ROD ICL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire



APPENDIX G

MANN-KENDALL ANALYSIS

Date	Chloroform Concentration (ug/L)
Jun-07	**5.8**
Nov-07	**230**
Apr-08	**710**
Aug-09	**11**
Oct-10	*ns/1*
Nov-11	**115**
Nov-12	*ns*
Aug-13	**12**
Jul-14	**7.1**

Number of Rounds (n) =	7
Non-detect samples =	0
Minimum Value =	5.80
Maximium Value =	710
Average =	155.843
Standard Deviation =	234.079
Coefficient of Variation(CV)=	1.502
Probability for Mann-Kendall	0.386

Chloroform

Well	NHP_MW-204S								
Param.	(µg/L)	**5.8**	**230**	**710**	**11**	**115**	**12**	**7.1**	**SUM**
			1	1	1	1	1	1	**6**
				1	-1	-1	-1	-1	**-3**
					-1	-1	-1	-1	**-4**
						1	1	-1	**1**
							-1	-1	**-2**
								-1	**-1**
						Mann-Kendall Statistic (S) =			**-3**
						Trend at 95% Confidence =			No Trend

Date	Vinyl Chloride Concentration (ug/L)
May-07	1
Oct-07	1
Apr-08	1
Aug-09	1
Oct-10	1
Nov-11	**9.3**
Nov-12	*ns*
Aug-13	**5.3**
Jul-14	**45**

Number of Rounds (n) =	8
Non-detect samples =	5
Minimum Value =	1.00
Maximium Value =	45
Average =	8.075
Standard Deviation =	14.495
Coefficient of Variation(CV)=	1.795
Probability for Mann-Kendall	0.031

Vinyl Chloride

Well	NHP_MW-309S									
Param.	(µg/L)	1	1	1	1	1	**9.3**	**5.3**	**45**	**SUM**
			0	0	0	0	1	1	1	**3**
				0	0	0	1	1	1	**3**
					0	0	1	1	1	**3**
						0	1	1	1	**3**
							1	1	1	**3**
								-1	1	**0**
									1	**1**
								Mann-Kendall Statistic (S) =		**16**
								Trend at 95% Confidence =		Increasing Trend

Date	TCE Concentration (ug/L)
Jun-07	**96**
Nov-07	**100**
Apr-08	**100**
Aug-09	**85**
Oct-10	**115**
Nov-11	**115**
Nov-12	**113**
Aug-13	**112**
Jul-14	**102**

						TCE					
Well	NHP_JCMW-2D										
Param.	(µg/L)	**96**	**100**	**100**	**85**	**115**	**115**	**113**	**112**	**102**	**SUM**
			1	1	-1	1	1	1	1	1	**6**
				0	-1	1	1	1	1	1	**4**
					-1	1	1	1	1	1	**4**
						1	1	1	1	1	**5**
							0	-1	-1	-1	**-3**
								-1	-1	-1	**-3**
									-1	-1	**-2**
										-1	**-1**
							Mann-Kendall Statistic (S) =				**10**
							Trend at 95% Confidence =				No Trend

Number of Rounds (n) =	9
Non-detect samples =	0
Minimum Value =	85.00
Maximium Value =	115
Average =	104.222
Standard Deviation =	10.293
Coefficient of Variation(CV)=	0.099
Probability for Mann-Kendall	0.179

Date	TCE Concentration (ug/L)
May-07	25
Nov-07	26
Apr-08	16
Aug-09	7.3
Oct-11	8.1
Jul-12	4.8
Aug-13	6.4
Jul-14	17

TCE										
Well	NHP_MW-108S									
Param.	(µg/L)	25	26	16	7.3	8.1	4.8	6.4	17	SUM
			1	-1	-1	-1	-1	-1	-1	-5
				-1	-1	-1	-1	-1	-1	-6
					-1	-1	-1	-1	1	-3
						1	-1	-1	1	0
							-1	-1	1	-1
								-1	1	0
									1	1
										0
								Mann-Kendall Statistic (S) =		-14
								Trend at 95% Confidence =		No Trend

Number of Rounds (n) =	8
Non-detect samples =	0
Minimum Value =	4.80
Maximium Value =	26
Average =	13.825
Standard Deviation =	8.450
Coefficient of Variation(CV)=	0.611
Probability for Mann-Kendall	0.054

Date	TCE Concentration (ug/L)
Jun-07	**7.9**
Nov-07	**4.4**
Apr-08	**3.3**
Aug-09	**5**
Oct-10	*ns*
Nov-11	**3.5**
Aug-13	**7.1**
Jul-14	**11**

TCE									
Well	NHP_MW-204S								
Param.	(µg/L)	**7.9**	**4.4**	**3.3**	**5**	**3.5**	**7.1**	**11**	**SUM**
			-1	-1	-1	-1	-1	1	**-4**
				-1	1	-1	1	1	**1**
					1	1	1	1	**4**
						-1	1	1	**1**
							1	1	**2**
								1	**1**
									0
						Mann-Kendall Statistic (S) =			**5**
						Trend at 95% Confidence =			No Trend

Number of Rounds (n) =	7
Non-detect samples =	0
Minimum Value =	3.30
Maximium Value =	11
Average =	6.029
Standard Deviation =	3.353
Coefficient of Variation(CV)=	0.556
Probability for Mann-Kendall	0.281

Date	TCE Concentration (ug/L)
May-07	5.1
Oct-07	82
Apr-08	3.8
Aug-09	18
Oct-10	48
Oct-11	28
Jul-12	33
Aug-13	123
Jul-14	119

TCE											
Well	NHP_MW-302S										
Param.	(µg/L)	5.1	82	3.8	18	48	28	33	123	119	SUM
			1	-1	1	1	1	1	1	1	6
				-1	-1	-1	-1	-1	1	1	-3
					1	1	1	1	1	1	6
						1	1	1	1	1	5
							-1	-1	1	1	0
								1	1	1	3
									1	1	2
										-1	-1
									Mann-Kendall Statistic (S) =		18
									Trend at 95% Confidence =		Increasing Trend

Number of Rounds (n) =	9
Non-detect samples =	0
Minimum Value =	3.80
Maximium Value =	123
Average =	51.100
Standard Deviation =	46.172
Coefficient of Variation(CV)=	0.904
Probability for Mann-Kendall	0.038

Date	TCE Concentration (ug/L)
May-07	2.2
Oct-07	4.8
Apr-08	11
Aug-09	3.1
Oct-10	6.7
Oct-11	13
Nov-12	*ns*
Aug-13	12
Jul-14	3.8

TCE										
Well	NHP_MW-303S									
Param.	(µg/L)	2.2	4.8	11	3.1	6.7	13	12	3.8	SUM
			1	1	1	1	1	1	1	7
				1	-1	1	1	1	-1	2
					-1	-1	1	1	-1	-1
						1	1	1	1	4
							1	1	-1	1
								-1	-1	-2
									-1	-1
							Mann-Kendall Statistic (S) =			10
							Trend at 95% Confidence =			No Trend

Number of Rounds (n) =	8
Non-detect samples =	0
Minimum Value =	2.20
Maximium Value =	13
Average =	7.075
Standard Deviation =	4.675
Coefficient of Variation(CV)=	0.661
Probability for Mann-Kendall	0.138

Date	TCE Concentration (ug/L)
May-07	120
Oct-07	130
Apr-08	79
Aug-09	74
Oct-10	78
Oct-11	53
Nov-12	*ns*
Aug-13	74
Jul-14	63

Number of Rounds (n) =	8
Non-detect samples =	0
Minimum Value =	53.00
Maximium Value =	130
Average =	83.875
Standard Deviation =	37.630
Coefficient of Variation(CV)=	0.449
Probability for Mann-Kendall	0.0116

TCE

Well	NHP_MW-303D									
Param.	(µg/L)	120	130	79	74	78	53	74	63	SUM
			1	-1	-1	-1	-1	-1	-1	**-5**
				-1	-1	-1	-1	-1	-1	**-6**
					-1	-1	-1	-1	-1	**-5**
						1	-1	0	-1	**-1**
							-1	-1	-1	**-3**
								1	1	**2**
									-1	**-1**
								Mann-Kendall Statistic (S) =		**-19**
								Trend at 95% Confidence =		Decreasing Trend

Date	TCE Concentration (ug/L)
May-07	36
Oct-07	35
Apr-08	26
Aug-09	40
Oct-10	36
Oct-11	38
Nov-12	*ns*
Aug-13	39
Jul-14	37

Number of Rounds (n) =	8
Non-detect samples =	0
Minimum Value =	26.00
Maximium Value =	40
Average =	35.875
Standard Deviation =	12.624
Coefficient of Variation(CV)=	0.352
Probability for Mann-Kendall	0.1685

TCE

Well	NHP_MW-304D									
Param.	(µg/L)	36	35	26	40	36	38	39	37	SUM
			-1	-1	1	0	1	1	1	**2**
				-1	1	1	1	1	1	**4**
					1	1	1	1	1	**5**
						-1	-1	-1	-1	**-4**
							1	1	1	**3**
								1	-1	**0**
									-1	**-1**
								Mann-Kendall Statistic (S) =		**9**
								Trend at 95% Confidence =		No Trend

Date	TCE Concentration (ug/L)
Jun-14	**1.2**
Oct-07	**55**
Apr-08	**1.3**
Aug-09	**63**
Oct-10	**201**
Oct-11	**128**
Nov-12	*ns*
Aug-13	**87**
Jul-14	**14**

Number of Rounds (n) =	8
Non-detect samples =	0
Minimum Value =	1.20
Maximium Value =	201
Average =	68.813
Standard Deviation =	68.807
Coefficient of Variation(CV)=	1.000
Probability for Mann-Kendall	0.138

TCE

Well	NHP_MW-308S									
Param.	(µg/L)	**1.2**	**55**	**1.3**	**63**	**201**	**128**	**87**	**14**	**SUM**
			1	1	1	1	1	1	1	**7**
				-1	1	1	1	1	-1	**2**
					1	1	1	1	1	**5**
						1	1	1	-1	**2**
							-1	-1	-1	**-3**
								-1	-1	**-2**
									-1	**-1**
								Mann-Kendall Statistic (S) =		**10**
								Trend at 95% Confidence =		No Trend

Date	1,4-Dioxane Concentration (ug/L)
Jun-07	15.1
Nov-07	1
Apr-08	11.6
Aug-09	18.4
Oct-10	21
Nov-11	18
Aug-13	13
Jul-14	17

1,4-Dioxane										
Well	NHP_JCMW-2D									
Param.	(µg/L)	15.1	1	11.6	18.4	21	18	13	17	SUM
			-1	-1	1	1	1	-1	1	1
				1	1	1	1	1	1	6
					1	1	1	1	1	5
						1	-1	-1	-1	-2
							-1	-1	-1	-3
								-1	-1	-2
									1	1
										0
								Mann-Kendall Statistic (S) =		6
								Trend at 95% Confidence =		No Trend

Number of Rounds (n) =	8
Non-detect samples =	1
Minimum Value =	1.00
Maximium Value =	21
Average =	14.388
Standard Deviation =	6.201
Coefficient of Variation(CV)=	0.431
Probability for Mann-Kendall	0.274

Date	1,4-Dioxane Concentration (ug/L)
May-07	7.2
Oct-07	8.3
Apr-08	1
Aug-09	6
Oct-10	1
Oct-11	2.9
Aug-13	2.84
Jul-14	2.52

1,4-Dioxane										
Well	NHP_MW-303D									
Param.	(µg/L)	7.2	8.3	1	6	1	2.9	2.84	2.52	SUM
			1	-1	-1	-1	-1	-1	-1	-5
				-1	-1	-1	-1	-1	-1	-6
					1	0	1	1	1	4
						-1	-1	-1	-1	-4
							1	1	1	3
								-1	-1	-2
									-1	-1
								Mann-Kendall Statistic (S) =		-11
								Trend at 95% Confidence =		No Trend

Number of Rounds (n) =	8
Non-detect samples =	2
Minimum Value =	1.00
Maximium Value =	8.3
Average =	3.970
Standard Deviation =	2.815
Coefficient of Variation(CV)=	0.709
Probability for Mann-Kendall	0.1135

Date	Cyanide Concentration (mg/L)
Jun-07	0.352
Oct-07	0.06
Apr-08	0.129
Aug-09	0.005
Oct-10	0.011
Oct-11	0.015
Nov-12	*ns*
Aug-13	0.028
Jul-14	0.29

Cyanide										
Well	NHP_MW-204S									
Param.	(mg/L)	0.352	0.06	0.129	0.005	0.011	0.015	0.028	0.29	SUM
			-1	-1	-1	-1	-1	-1	-1	-7
				1	-1	-1	-1	-1	1	-2
					-1	-1	-1	-1	1	-3
						1	1	1	1	4
							1	1	1	3
								1	1	2
									1	1
								Mann-Kendall Statistic (S) =		-2
								Trend at 95% Confidence =		No Trend

Number of Rounds (n) =	8
Non-detect samples =	1
Minimum Value =	0.01
Maximium Value =	0.352
Average =	0.111
Standard Deviation =	0.133
Coefficient of Variation(CV)=	1.195
Probability for Mann-Kendall	0.452

Date	Nickel Concentration (mg/L)
May-07	0.519
Oct-07	0.452
Apr-08	0.432
Aug-09	0.596
Oct-10	0.309
Oct-11	0.2703
Nov-12	*ns*
Aug-13	0.1598
Jul-14	0.3383

Nickel Concentration										
Well	NHP_MW-303S									
Param.	(mg/L)	0.519	0.452	0.432	0.596	0.309	0.2703	0.1598	0.3383	SUM
			-1	-1	1	-1	-1	-1	-1	**-5**
				-1	1	-1	-1	-1	-1	**-4**
					1	-1	-1	-1	-1	**-3**
						-1	-1	-1	-1	**-4**
							-1	-1	1	**-1**
								-1	1	**0**
									1	**1**
								Mann-Kendall Statistic (S) =		**-16**
								Trend at 95% Confidence =		Decreasing Trend

Number of Rounds (n) =	8
Non-detect samples =	0
Minimum Value =	0.16
Maximium Value =	0.596
Average =	0.385
Standard Deviation =	0.185
Coefficient of Variation(CV)=	0.480
Probability for Mann-Kendall	0.031

Date	Nickel Concentration (mg/L)
May-07	**0.275**
Oct-07	**0.503**
Apr-08	**0.514**
Aug-09	**0.1954**
Oct-10	**0.0679**
Oct-11	**0.1379**
Nov-12	*ns*
Aug-13	**0.1235**
Jul-14	**0.1087**

Number of Rounds (n) =	8
Non-detect samples =	0
Minimum Value =	0.07
Maximium Value =	0.514
Average =	0.241
Standard Deviation =	0.184
Coefficient of Variation(CV)=	0.763
Probability for Mann-Kendall	0.031

Nickel Concentration

Well	NHP_MW-304D									
Param.	(mg/L)	**0.275**	**0.503**	**0.514**	**0.1954**	**0.0679**	**0.1379**	**0.1235**	**0.1087**	**SUM**
			1	1	-1	-1	-1	-1	-1	**-3**
				1	-1	-1	-1	-1	-1	**-4**
					-1	-1	-1	-1	-1	**-5**
						-1	-1	-1	-1	**-4**
							1	1	1	**3**
								-1	-1	**-2**
									-1	**-1**
								Mann-Kendall Statistic (S) =		**-16**
								Trend at 95% Confidence =		Decreasing Trend

Date	Manganese Concentration (mg/L)
Jun-07	**1.82**
Nov-07	**2.18**
Apr-08	**1.96**
Aug-09	**2.46**
Oct-10	**2.23**
Nov-11	**2.61**
Nov-12	**2.16**
Aug-13	**2.32**
Jul-14	**2.59**

Number of Rounds (n) =	9
Non-detect samples =	0
Minimum Value =	1.82
Maximium Value =	2.61
Average =	2.259
Standard Deviation =	0.268
Coefficient of Variation(CV)=	0.119
Probability for Mann-Kendall	0.038

Manganese Concentration

Well	NHP_JCMW-2D										
Param.	(mg/L)	**1.82**	**2.18**	**1.96**	**2.46**	**2.23**	**2.61**	**2.16**	**2.32**	**2.59**	**SUM**
			1	1	1	1	1	1	1	1	**8**
				-1	1	1	1	-1	1	1	**3**
					1	1	1	1	1	1	**6**
						-1	1	-1	-1	1	**-1**
							1	-1	1	1	**2**
								-1	-1	-1	**-3**
									1	1	**2**
										1	**1**
								Mann-Kendall Statistic (S) =			**18**
								Trend at 95% Confidence =			Increasing Trend

Date	Manganese Concentration (mg/L)
Jun-07	0.0892
Oct-07	2.45
Apr-08	0.322
Aug-09	4.54
Oct-10	2.59
Oct-11	2.68
Nov-12	*ns*
Aug-13	4.12
Jul-14	0.368

Manganese Concentration										
Well	NHP_MW-308S									
Param.	(mg/L)	0.0892	2.45	0.322	4.54	2.59	2.68	4.12	0.368	SUM
			1	1	1	1	1	1	1	**7**
				-1	1	1	1	1	-1	**2**
					1	1	1	1	1	**5**
						-1	-1	-1	-1	**-4**
							1	1	-1	**1**
								1	-1	**0**
									-1	**-1**
								Mann-Kendall Statistic (S) =		**10**
								Trend at 95% Confidence =		No Trend

Number of Rounds (n) =	8
Non-detect samples =	0
Minimum Value =	0.09
Maximium Value =	4.54
Average =	2.145
Standard Deviation =	1.768
Coefficient of Variation(CV)=	0.824
Probability for Mann-Kendall	0.138

Date	Manganese Concentration (mg/L)
Jun-07	**0.344**
Nov-07	**0.219**
Apr-08	**0.519**
Aug-09	**0.671**
Oct-10	**0.7096**
Nov-11	**0.5776**
Nov-12	*ns*
Aug-13	**1.37**
Jul-14	**2.49**

Manganese Concentration										
Well	NHP_MW-308D									
Param.	(mg/L)	**0.344**	**0.219**	**0.519**	**0.671**	**0.7096**	**0.5776**	**1.37**	**2.49**	**SUM**
			-1	1	1	1	1	1	1	**5**
				1	1	1	1	1	1	**6**
					1	1	1	1	1	**5**
						1	-1	1	1	**2**
							-1	1	1	**1**
								1	1	**2**
									1	**1**
								Mann-Kendall Statistic (S) =		**22**
								Trend at 95% Confidence =		Increasing Trend

Number of Rounds (n) =	8
Non-detect samples =	0
Minimum Value =	0.22
Maximium Value =	2.49
Average =	0.863
Standard Deviation =	0.751
Coefficient of Variation(CV)=	0.870
Probability for Mann-Kendall	0.0028

Date	Manganese Concentration (mg/L)
May-07	3.27
Oct-07	1.33
Apr-08	4.55
Aug-09	0.2567
Oct-10	0.2574
Oct-11	1.55
Nov-12	*ns*
Aug-13	2.8
Jul-14	1.64

Number of Rounds (n) =	8
Non-detect samples =	0
Minimum Value =	0.2567
Maximium Value =	4.55
Average =	1.957
Standard Deviation =	1.541
Coefficient of Variation(CV)=	0.788
Probability for Mann-Kendall	0.548

Manganese Concentration

Well	NHP_MW-310S									
Param.	(mg/L)	3.27	1.33	4.55	0.2567	0.2574	1.55	2.8	1.64	SUM
			-1	1	-1	-1	-1	-1	-1	**-5**
				1	-1	-1	1	1	1	**2**
					-1	-1	-1	-1	-1	**-5**
						1	1	1	1	**4**
							1	1	1	**3**
								1	1	**2**
									-1	**-1**
								Mann-Kendall Statistic (S) =		**0**
								Trend at 95% Confidence =		No Trend

Date	Cadmium Concentration (mg/L)
May-07	0.0721
Nov-07	0.0972
Apr-08	0.0744
Aug-09	0.1161
Oct-10	*ns/1*
Oct-11	0.1006
Jul-12	*ns*
Aug-13	0.1607
Jul-14	0.1395

Number of Rounds (n) =	7
Non-detect samples =	0
Minimum Value =	0.07
Maximium Value =	0.1607
Average =	0.109
Standard Deviation =	0.056
Coefficient of Variation(CV)=	0.512
Probability for Mann-Kendall	0.015

Cadmium Concentration

Well	NHP_MW-108S								
Param.	(mg/L)	0.0721	0.0972	0.0744	0.1161	0.1006	0.1607	0.1395	SUM
			1	1	1	1	1	1	**6**
				-1	1	1	1	1	**3**
					1	1	1	1	**4**
						-1	1	1	**1**
							1	1	**2**
								-1	**-1**
						Mann-Kendall Statistic (S) =			**15**
						Trend at 95% Confidence =			Increasing Trend

Date	Cadmium Concentration (mg/L)
May-07	1.11
Oct-07	1.03
Apr-08	0.721
Aug-09	1.44
Oct-10	0.5578
Oct-11	0.5195
Nov-12	*ns*
Aug-13	0.2046
Jul-14	1.05

Cadmium Concentration										
Well	NHP_MW-303S									
Param.	(mg/L)	1.11	1.03	0.721	1.44	0.5578	0.5195	0.2046	1.05	SUM
			-1	-1	1	-1	-1	-1	-1	**-5**
				-1	1	-1	-1	-1	1	**-2**
					1	-1	-1	-1	1	**-1**
						-1	-1	-1	-1	**-4**
							-1	-1	1	**-1**
								-1	1	**0**
									1	**1**
								Mann-Kendall Statistic (S) =		**-12**
								Trend at 95% Confidence =		No Trend

Number of Rounds (n) =	8
Non-detect samples =	0
Minimum Value =	0.2046
Maximium Value =	1.44
Average =	0.829
Standard Deviation =	0.464
Coefficient of Variation(CV)=	0.560
Probability for Mann-Kendall	0.089

Date	Cadmium Concentration (mg/L)
May-07	0.0025
Oct-07	0.0354
Apr-08	0.0025
Aug-09	0.0045
Oct-10	0.0303
Nov-11	0.0023
Jul-12	*ns*
Aug-13	0.0048
Jul-14	0.0206

Cadmium Concentration										
Well	NHP_MW-301S									
Param.	(mg/L)	0.0025	0.0354	0.0025	0.0045	0.0303	0.0023	0.0048	0.0206	SUM
			1	0	1	1	-1	1	1	4
				-1	-1	-1	-1	-1	-1	-6
					1	1	-1	1	1	3
						1	-1	1	1	2
							-1	-1	-1	-3
								1	1	2
									1	1
								Mann-Kendall Statistic (S) =		3
								Trend at 95% Confidence =		No Trend

Number of Rounds (n) =	8
Non-detect samples =	1
Minimum Value =	0.0023
Maximium Value =	0.0354
Average =	0.013
Standard Deviation =	0.014
Coefficient of Variation(CV)=	1.058
Probability for Mann-Kendall	0.406

Date	Cadmium Concentration (mg/L)
May-07	0.0025
Oct-07	**0.0018**
Apr-08	**0.0017**
Aug-09	**0.0036**
Oct-10	0.001
Oct-11	**0.0128**
Nov-12	*ns*
Aug-13	**0.0094**
Jul-14	**0.0124**

Cadmium Concentration										
Well	NHP_MW-304D									
Param.	(mg/L)	0.0025	**0.0018**	**0.0017**	**0.0036**	0.001	**0.0128**	**0.0094**	**0.0124**	**SUM**
			-1	-1	1	-1	1	1	1	**1**
				-1	1	-1	1	1	1	**2**
					1	-1	1	1	1	**3**
						-1	1	1	1	**2**
							1	1	1	**3**
								-1	-1	**-2**
									1	**1**
								Mann-Kendall Statistic (S) =		**10**
								Trend at 95% Confidence =		No Trend

Number of Rounds (n) =	8
Non-detect samples =	2
Minimum Value =	0.001
Maximium Value =	0.0128
Average =	0.006
Standard Deviation =	0.005
Coefficient of Variation(CV)=	0.897
Probability for Mann-Kendall	0.138

Date	Cadmium Concentration (mg/L)
Jun-07	0.0025
Oct-07	0.0066
Apr-08	0.0009
Aug-09	0.0076
Oct-10	0.0132
Oct-11	0.0066
Nov-12	*ns*
Aug-13	0.0058
Jul-14	0.0026

Cadmium Concentration										
Well	NHP_MW-308S									
Param.	(mg/L)	0.0025	0.0066	0.0009	0.0076	0.0132	0.0066	0.0058	0.0026	SUM
			1	-1	1	1	1	1	1	**5**
				-1	1	1	0	-1	-1	**-1**
					1	1	1	1	1	**5**
						1	-1	-1	-1	**-2**
							-1	-1	-1	**-3**
								-1	-1	**-2**
									-1	**-1**
								Mann-Kendall Statistic (S) =		**1**
								Trend at 95% Confidence =		No Trend

Number of Rounds (n) =	8
Non-detect samples =	1
Minimum Value =	0.0009
Maximium Value =	0.0132
Average =	0.006
Standard Deviation =	0.004
Coefficient of Variation(CV)=	0.714
Probability for Mann-Kendall	0.500

Date	Cadmium Concentration (mg/L)
May-07	0.0672
Oct-07	0.0744
Apr-08	0.0146
Aug-09	0.0114
Oct-10	0.0049
Nov-11	0.0095
Nov-12	*ns*
Aug-13	0.0033
Jul-14	0.0035

Cadmium Concentration										
Well	NHP_MW-309S									
Param.	(mg/L)	0.0672	0.0744	0.0146	0.0114	0.0049	0.0095	0.0033	0.0035	SUM
			1	-1	-1	-1	-1	-1	-1	-5
				-1	-1	-1	-1	-1	-1	-6
					-1	-1	-1	-1	-1	-5
						-1	-1	-1	-1	-4
							1	-1	-1	-1
								-1	-1	-2
									1	1
								Mann-Kendall Statistic (S) =		-22
								Trend at 95% Confidence =		Decreasing Trend

Number of Rounds (n) =	8
Non-detect samples =	0
Minimum Value =	0.0033
Maximium Value =	0.0744
Average =	0.024
Standard Deviation =	0.029
Coefficient of Variation(CV)=	1.214
Probability for Mann-Kendall	0.0028

Date	Cadmium Concentration (mg/L)
May-07	0.014
Oct-07	0.0009
Apr-08	0.0104
Aug-09	0.0024
Oct-10	0.0043
Oct-11	0.0097
Nov-12	*ns*
Aug-13	0.0134
Jul-14	0.0026

Cadmium Concentration										
Well	NHP_MW-310S									
Param.	(mg/L)	0.014	0.0009	0.0104	0.0024	0.0043	0.0097	0.0134	0.0026	SUM
			-1	-1	-1	-1	-1	-1	-1	-7
				1	1	1	1	1	1	6
					-1	-1	-1	1	-1	-3
						1	1	1	1	4
							1	1	-1	1
								1	-1	0
									-1	-1
								Mann-Kendall Statistic (S) =		0
								Trend at 95% Confidence =		No Trend

Number of Rounds (n) =	8
Non-detect samples =	1
Minimum Value =	0.0009
Maximium Value =	0.014
Average =	0.007
Standard Deviation =	0.005
Coefficient of Variation(CV)=	0.759
Probability for Mann-Kendall	0.548

Date	Arsenic Concentration (mg/L)
Jun-07	0.0042
Nov-07	**0.149**
Apr-08	**0.0146**
Aug-09	**0.0101**
Oct-10	**0.0189**
Nov-11	**0.0294**
Nov-12	**0.0209**
Aug-13	**0.0237**
Jul-14	**0.0150**

						Arsenic Concentration					
Well	NHP_JCMW-2D										
Param.	(mg/L)	0.0042	**0.149**	**0.0146**	**0.0101**	**0.0189**	**0.0294**	**0.0209**	**0.0237**	**0.0150**	**SUM**
			1	1	1	1	1	1	1	1	**8**
				-1	-1	-1	-1	-1	-1	-1	**-7**
					-1	1	1	1	1	1	**4**
						1	1	1	1	1	**5**
							1	1	1	-1	**2**
								-1	-1	-1	**-3**
									1	-1	**0**
										-1	**-1**
										Mann-Kendall Statistic (S) =	**8**
										Trend at 95% Confidence =	No Trend

Number of Rounds (n) =	9
Non-detect samples =	1
Minimum Value =	0.0042
Maximium Value =	0.149
Average =	0.032
Standard Deviation =	0.045
Coefficient of Variation(CV)=	1.404
Probability for Mann-Kendall	0.238

Date	Arsenic Concentration (mg/L)
May-07	0.0298
Oct-07	0.0037
Apr-08	0.0214
Aug-09	0.026
Oct-10	ns/1
Oct-11	0.0214
Nov-12	ns
Aug-13	0.0223
Jul-14	0.0254

Arsenic Concentration										
Well	NHP_MW-109D									
Param.	(mg/L)	0.0298	0.0037	0.0214	0.026	0.0214	0.0223	0.0254	0.0057	SUM
			-1	-1	-1	-1	-1	-1	-1	-7
				1	1	1	1	1	1	6
					1	0	1	1	-1	2
						-1	-1	-1	-1	-4
							1	1	-1	1
								1	-1	0
									-1	-1
								Mann-Kendall Statistic (S) =		-3
								Trend at 95% Confidence =		No Trend

Number of Rounds (n) =	7
Non-detect samples =	1
Minimum Value =	0.0037
Maximium Value =	0.0298
Average =	0.021
Standard Deviation =	0.012
Coefficient of Variation(CV)=	0.556
Probability for Mann-Kendall	0.386

Date	Arsenic Concentration (mg/L)
Jun-07	0.0104
Oct-07	**0.0195**
Apr-08	**0.0128**
Aug-09	**0.0184**
Oct-11	**0.013**
Nov-12	**0.177**
Aug-13	**0.0181**
Jul-14	**0.0167**

Arsenic Concentration										
Well	NHP_MW-308R									
Param.	(mg/L)	0.0104	**0.0195**	**0.0128**	**0.0184**	**0.013**	**0.177**	**0.0181**	**0.0167**	**SUM**
			1	1	1	1	1	1	1	**7**
				-1	-1	-1	1	-1	-1	**-4**
					1	1	1	1	1	**5**
						-1	1	-1	-1	**-2**
							1	1	1	**3**
								-1	-1	**-2**
									-1	**-1**
								Mann-Kendall Statistic (S) =		**6**
								Trend at 95% Confidence =		No Trend

Number of Rounds (n) =	8
Non-detect samples =	1
Minimum Value =	0.0104
Maximium Value =	0.177
Average =	0.036
Standard Deviation =	0.057
Coefficient of Variation(CV)=	1.600
Probability for Mann-Kendall	0.274

Date	Arsenic Concentration (mg/L)
May-07	0.0046
Oct-07	0.0111
Apr-08	0.005
Aug-09	0.0049
Oct-10	0.0149
Nov-11	0.0278
Aug-13	0.0445
Jul-14	0.0254

Arsenic Concentration										
Well	NHP_MW-309S									
Param.	(mg/L)	0.0046	0.0111	0.005	0.0049	0.0149	0.0278	0.0445	0.0254	SUM
			1	1	1	1	1	1	1	7
				-1	-1	1	1	1	1	2
					-1	1	1	1	1	3
						1	1	1	1	4
							1	1	1	3
								1	-1	0
									-1	-1
								Mann-Kendall Statistic (S) =		18
								Trend at 95% Confidence =		Increasing Trend

Number of Rounds (n) =	8
Non-detect samples =	1
Minimum Value =	0.005
Maximium Value =	0.0445
Average =	0.017
Standard Deviation =	0.014
Coefficient of Variation(CV)=	0.826
Probability for Mann-Kendall	0.016

Date	Arsenic Concentration (mg/L)
May-07	0.0205
Oct-07	0.00495
Apr-08	0.0243
Aug-09	0.0176
Oct-10	0.0086
Oct-11	0.0154
Nov-12	*ns*
Aug-13	0.0099
Jul-14	0.0211

Number of Rounds (n) =	8
Non-detect samples =	1
Minimum Value =	0.00495
Maximium Value =	0.0243
Average =	0.015
Standard Deviation =	0.008
Coefficient of Variation(CV)=	0.535
Probability for Mann-Kendall	0.548

Arsenic Concentration

Well	NHP_MW-310S									
Param.	(mg/L)	0.0205	0.00495	0.0243	0.0176	0.0086	0.0154	0.0099	0.0211	SUM
			-1	1	-1	-1	-1	-1	1	-3
				1	1	1	1	1	1	6
					-1	-1	-1	-1	-1	-5
						-1	-1	-1	1	-2
							1	1	1	3
								-1	1	0
									1	1
								Mann-Kendall Statistic (S) =		0
								Trend at 95% Confidence =		No Trend

APPENDIX H

NATURAL ATTENUATION CONDITIONS

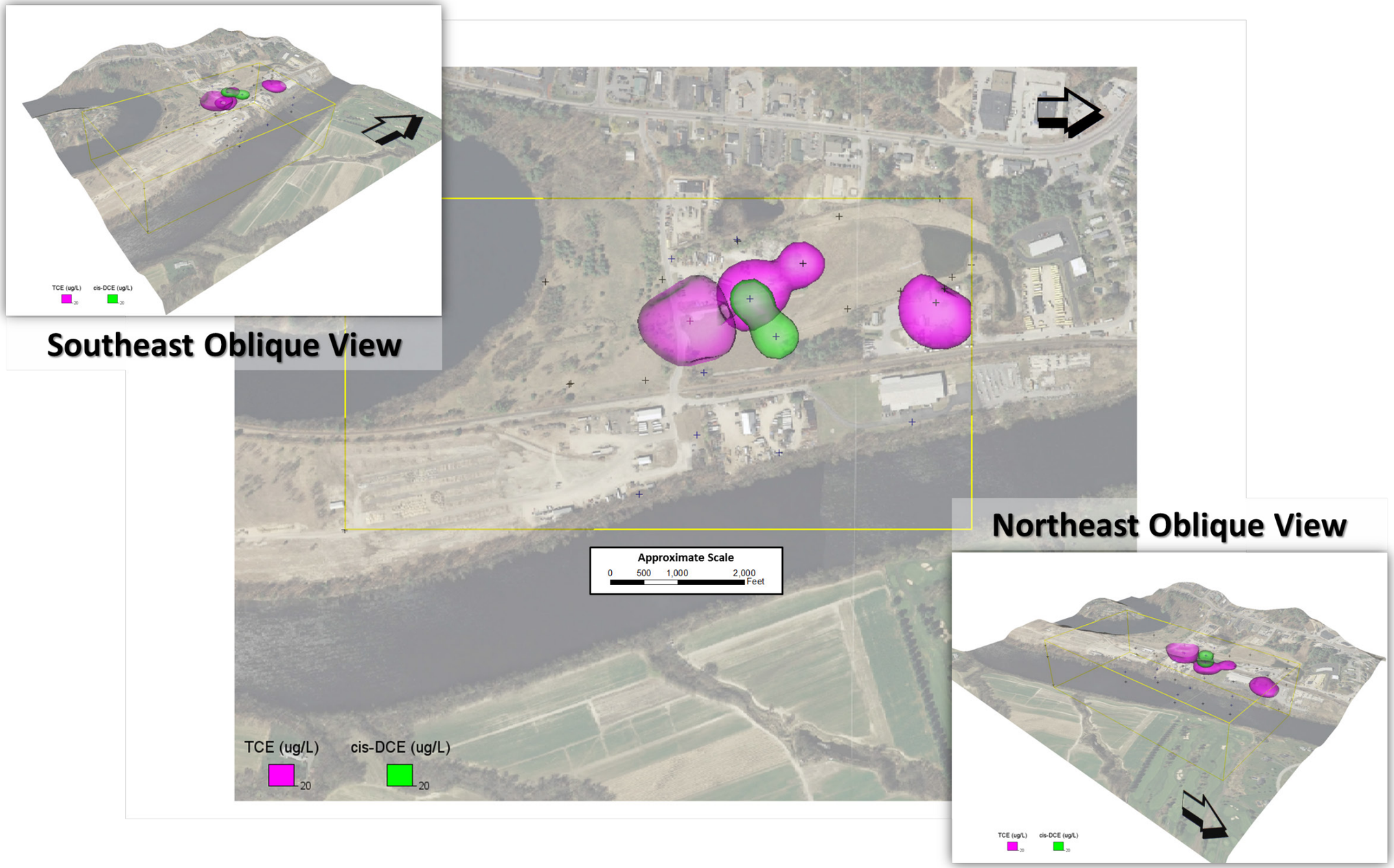


Plate 1: Estimated isosurfaces associated with recently collected TCE and cis-DCE data. Filled areas represent estimated volumes exceeding the indicated concentration thresholds. Markers (i.e., indicated by cross symbols) represent sample collection locations.

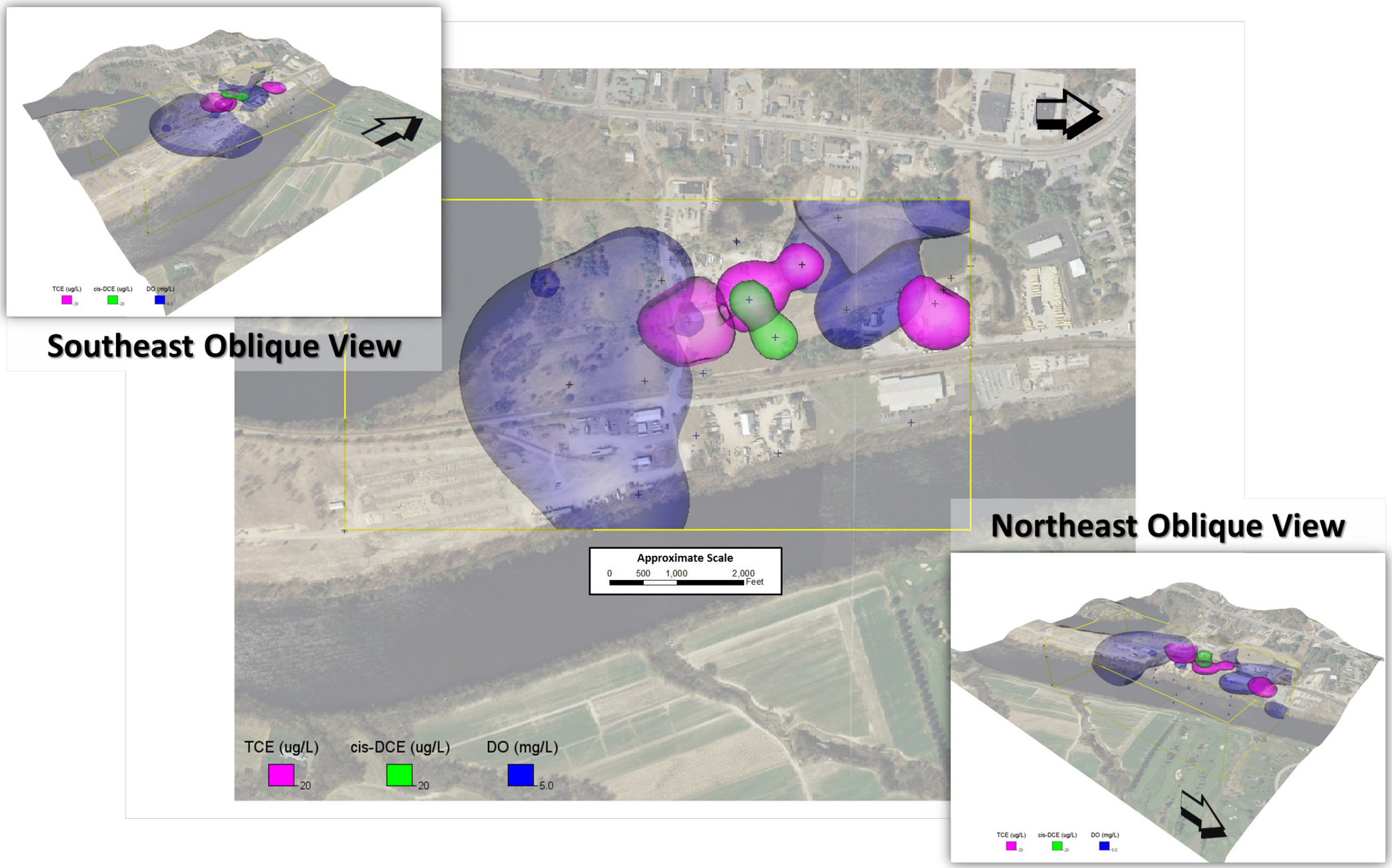


Plate 2: Estimated isosurfaces associated with recently collected TCE, cis-DCE and dissolved oxygen (DO) data. Filled areas represent estimated volumes exceeding the indicated concentration thresholds. Markers (i.e., indicated by cross symbols) represent sample collection locations.

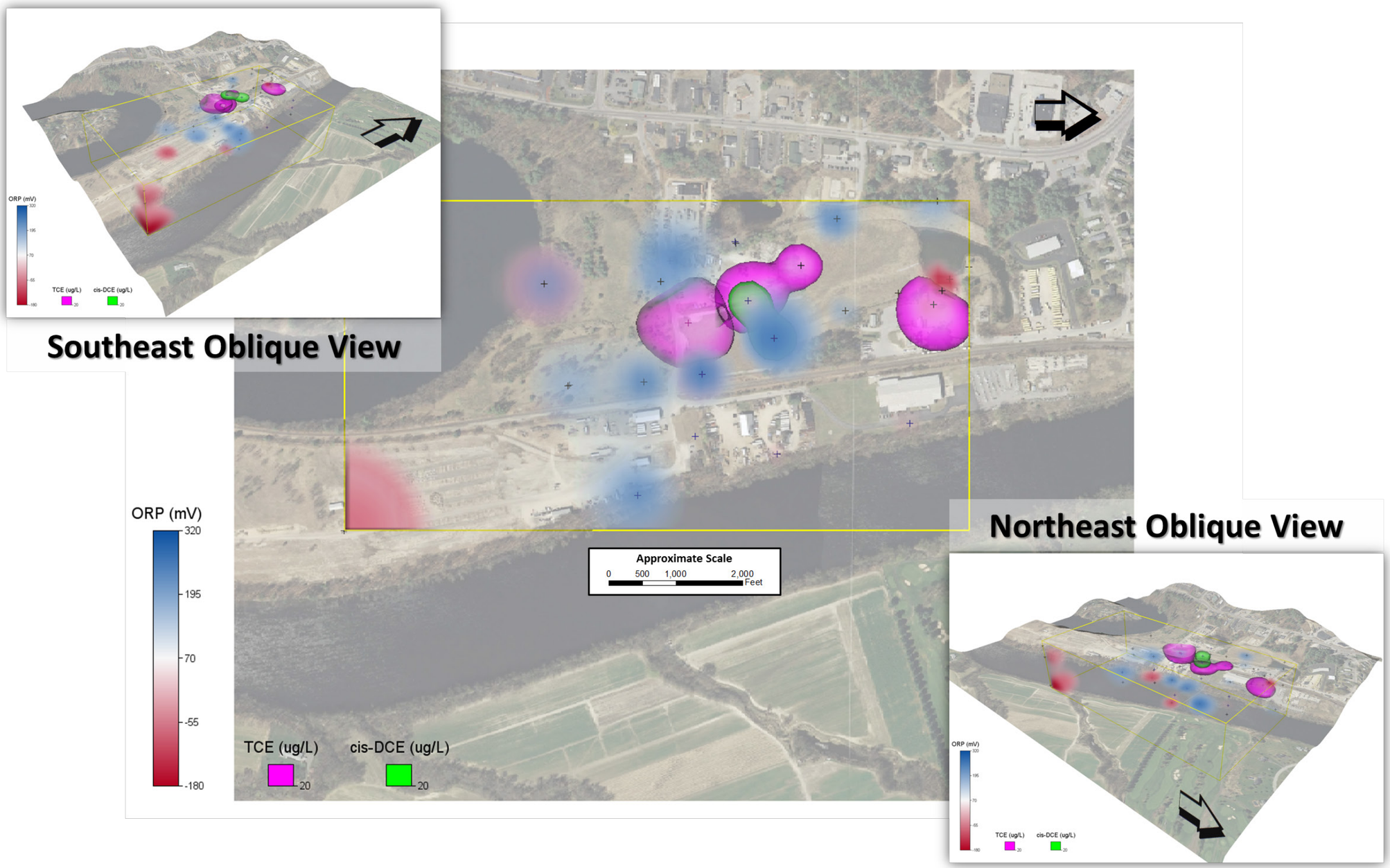


Plate 3: Estimated isosurfaces associated with recently collected TCE, cis-DCE and oxidation-reduction potential (ORP) data. Filled areas represent estimated volumes exceeding the indicated concentration thresholds. Markers (i.e., indicated by cross symbols) represent sample collection locations. ORP conditions indicated shown as volume render (i.e., extreme conditions represented by more intense coloring).

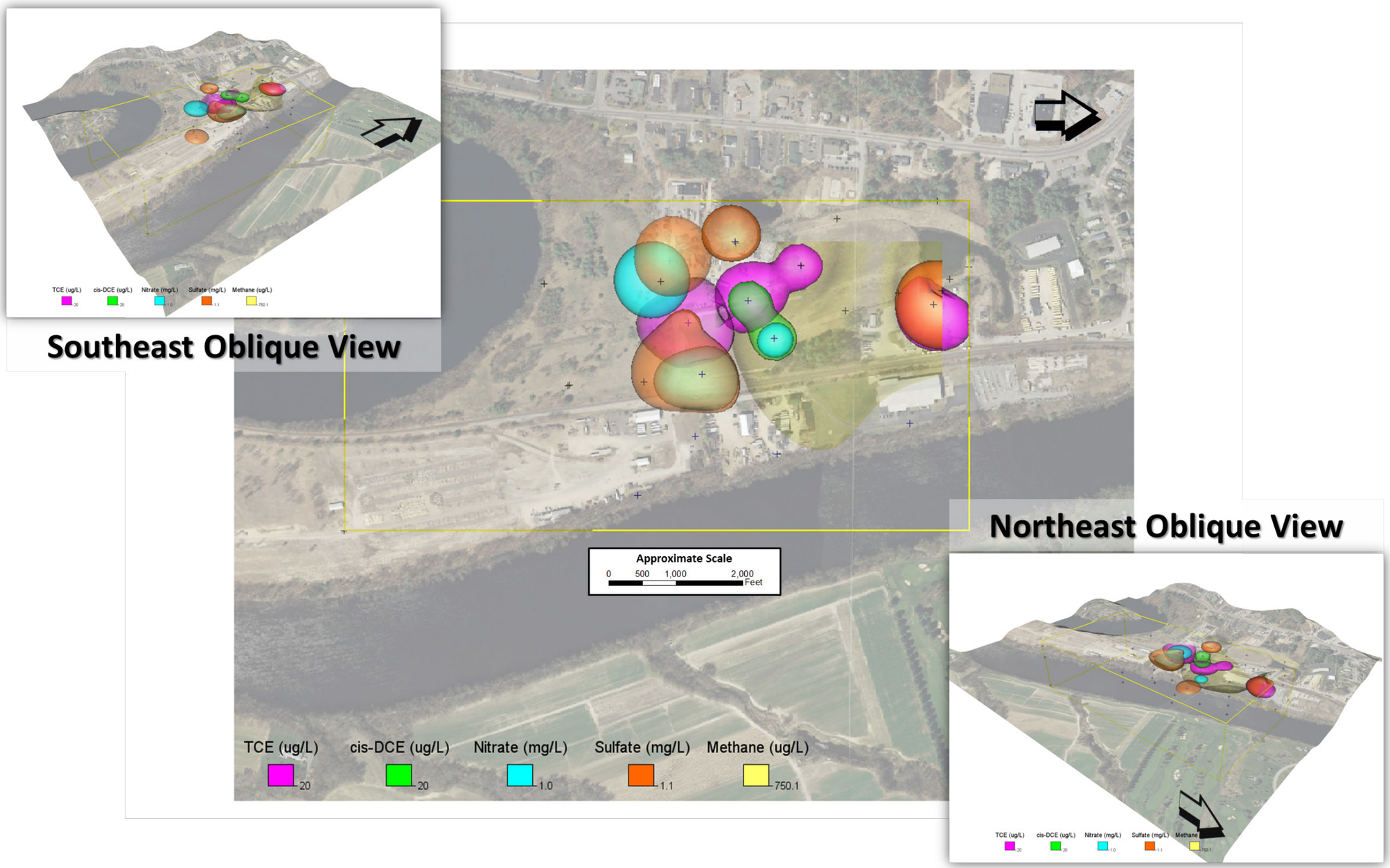


Plate 4: Estimated isosurfaces associated with recently collected TCE, cis-DCE, nitrate, sulfate and methane data. Filled areas represent estimated volumes exceeding the indicated concentration thresholds. Markers (i.e., indicated by cross symbols) represent sample collection locations.

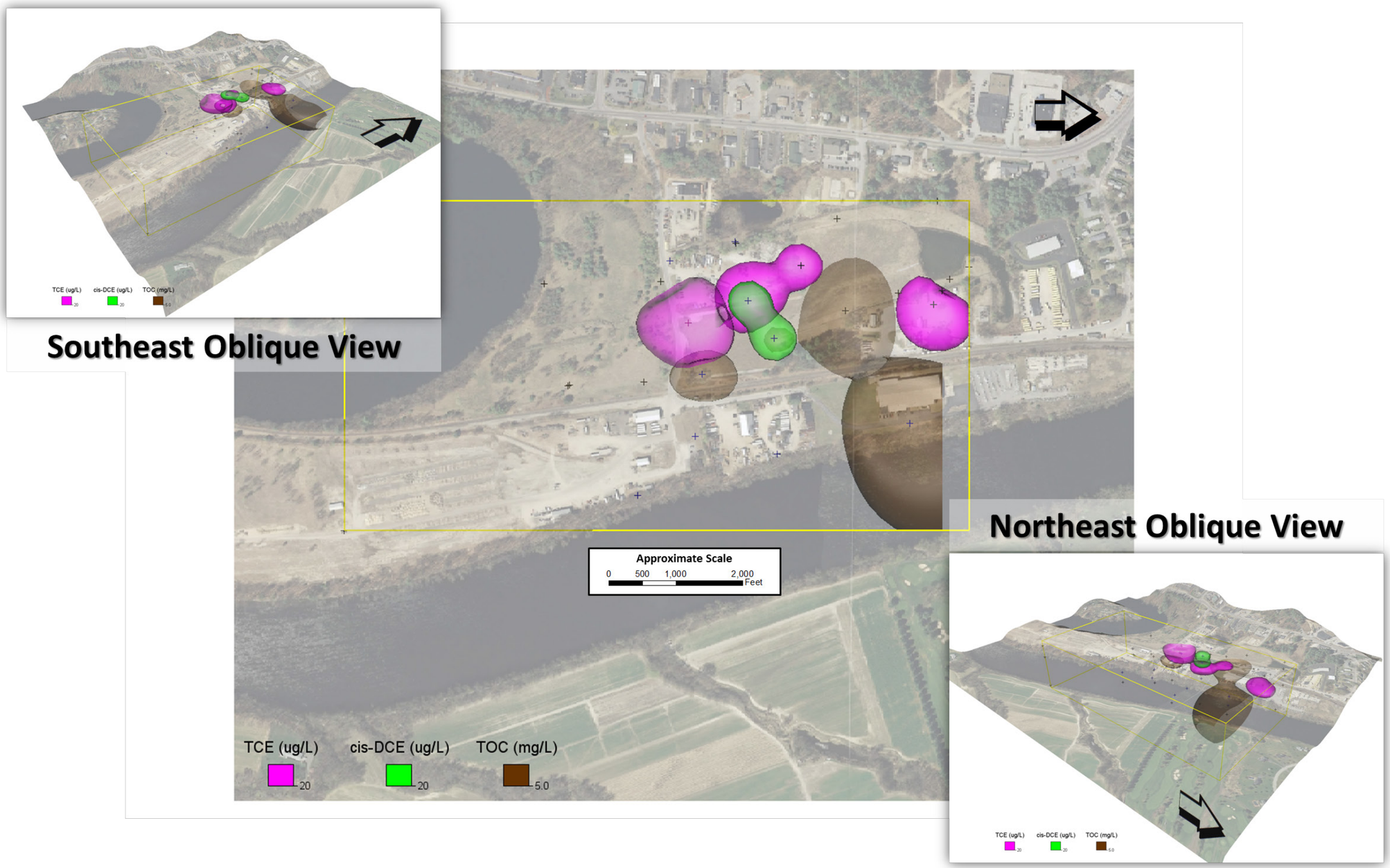


Plate 5: Estimated isosurfaces associated with recently collected TCE, cis-DCE and total organic carbon (TOC) data. Filled areas represent estimated volumes exceeding the indicated concentration thresholds. Markers (i.e., indicated by cross symbols) represent sample collection locations.

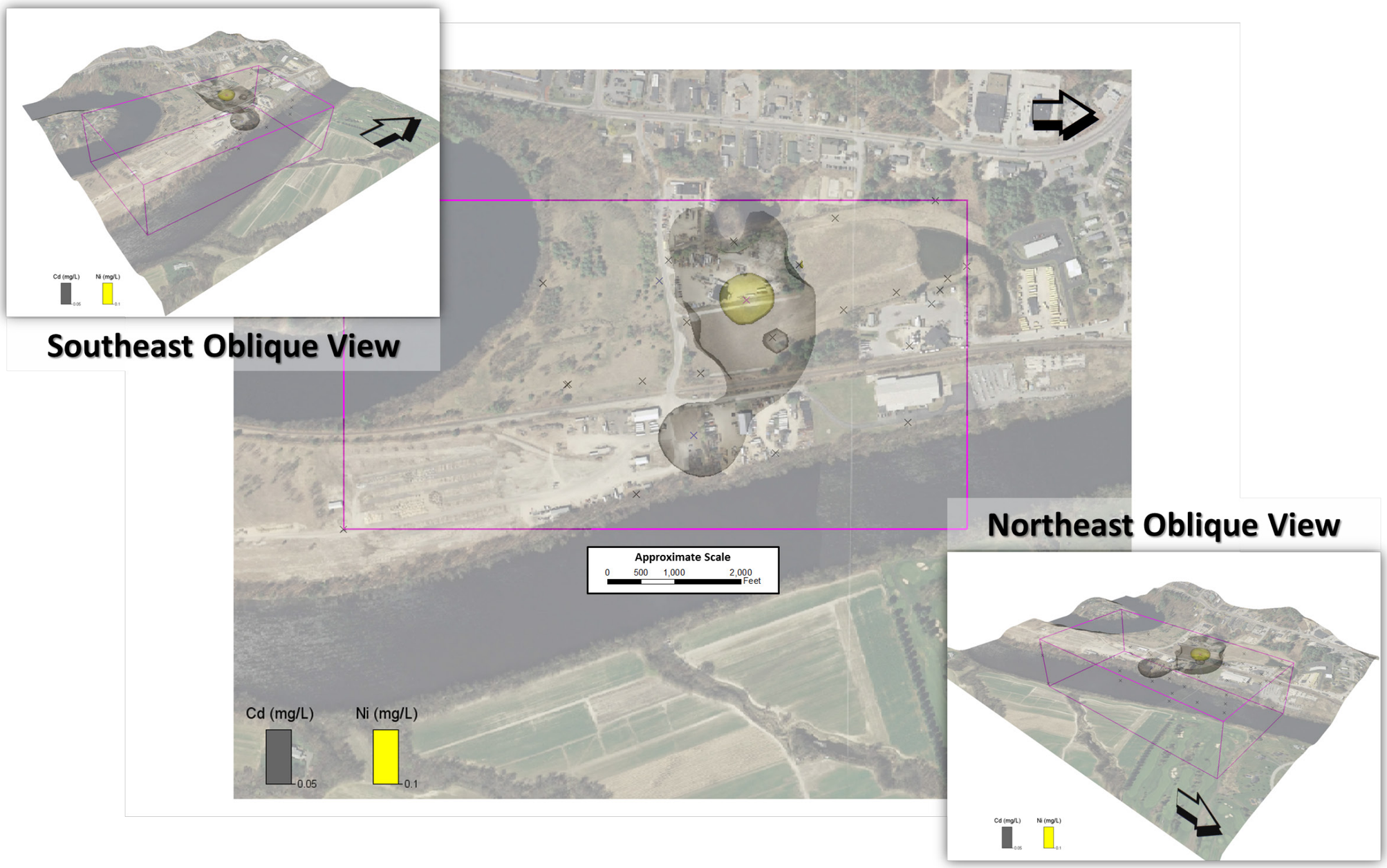


Plate 6: Estimated isosurfaces associated with recently collected cadmium (Cd) and nickel (Ni) data. Filled areas represent estimated volumes exceeding the indicated concentration thresholds. Markers (i.e., indicated by cross symbols) represent sample collection locations.

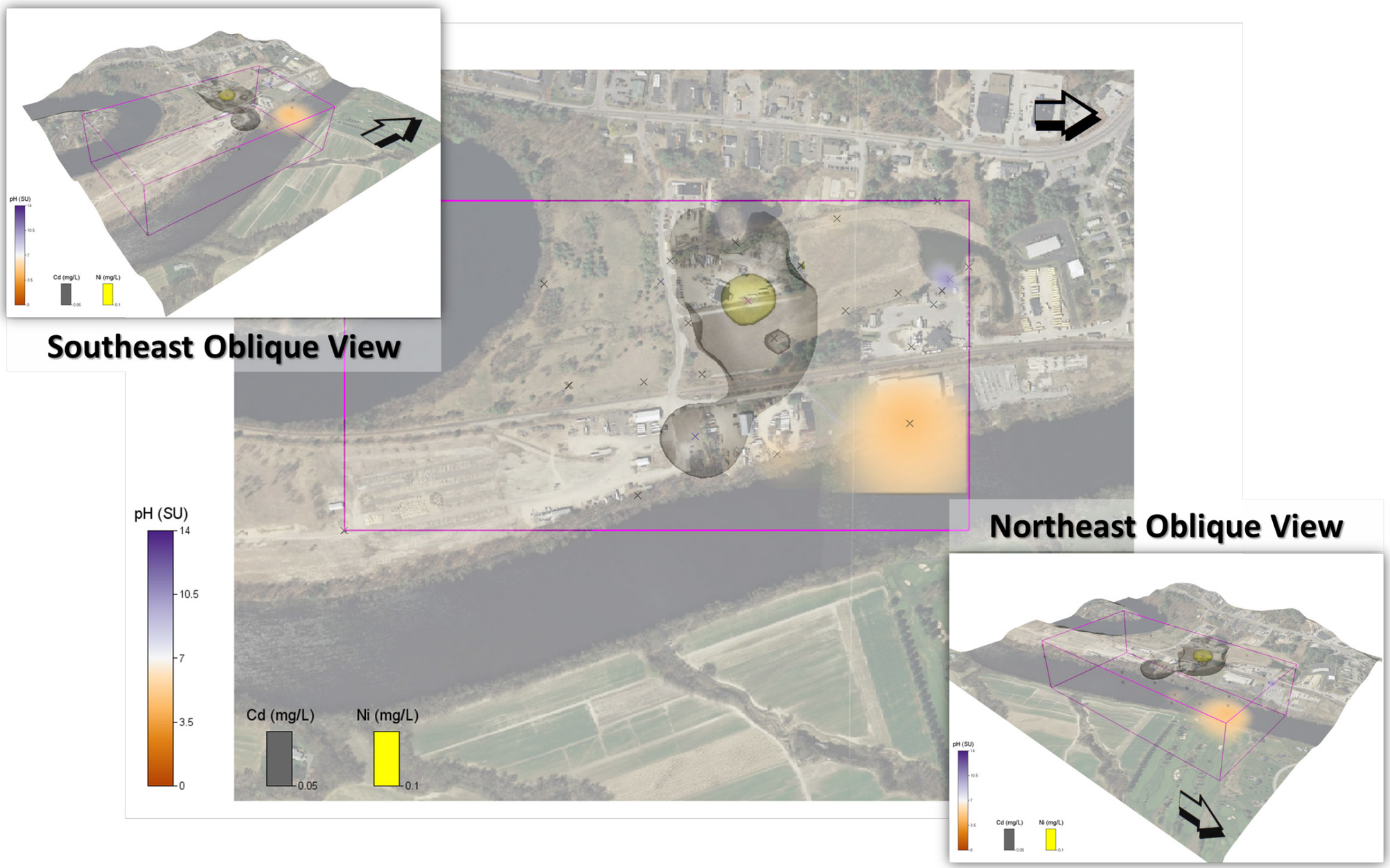


Plate 7: Estimated isosurfaces associated with recently collected cadmium (Cd), nickel (Ni) and pH data. Filled areas represent estimated volumes exceeding the indicated concentration thresholds. Markers (i.e., indicated by cross symbols) represent sample collection locations. pH conditions indicated shown as volume render (i.e., extreme conditions represented by more intense coloring).