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Memorandum

To	Marie Esten, Tony Silva	Page 1
Project No.	60565200	
Subject	New Bedford Harbor Groundwater Monitoring – September 2019 Summary	
From	Helen Jones	
Date	November 15, 2019	

Introduction

This Technical Report presents a summary of the groundwater monitoring activities conducted at the Sawyer Street Confined Disposal Facility (CDF) at the New Bedford Harbor Superfund Site (Site) in New Bedford, Massachusetts during the Fall 2019 monitoring period. Field activities were conducted in accordance with the FSP (AECOM, 2019a), Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) Addendum Revision 10.1 (AECOM, 2019b), and Accident Prevention Plan (APP) (AECOM, 2019c). No deviations from the FSP, QAPP, or APP were noted.

Field Activity Summary

The six groundwater wells located around the perimeter of the CDF were sampled on September 23 and 24, 2019, continuing the monitoring program that has been ongoing since 2001 (Figure 1). Samples were collected in accordance with SOP NBH-W-04, Low Flow Groundwater Sampling, and the EPA Region I Low Stress (flow) Purging and Sampling Groundwater Procedure for the Collection of Groundwater Samples from Monitoring Wells, Rev.4, September 19, 2017 (EPA, 2017). The objective of the monitoring program is to provide data that can be used to evaluate the integrity of the Sawyer Street CDF, as well as assess trends in groundwater concentrations of polychlorinated biphenyls (PCBs) as Aroclors, selected metals (cadmium, chromium, copper, and lead), volatile organic compounds (VOCs), and total suspended solids (TSS). Results from the sampling will be used to support compliance of ongoing remediation activities at the Site.

The Fall groundwater sampling program consisted of sampling the six wells located around the perimeter of the CDF; MW-1, MW-3, MW-4A, MW-5, MW-6, and MW-7A (Figure 1). Prior to the sampling, the CDF wells were screened for headspace using a photoionization detector (PID). Wells were developed in October 2018, so redevelopment of the wells was not included in the scope of work for the 2019 sampling event.

With the exception of MW-3, Groundwater was removed from each monitoring well using a bladder pump system and dedicated Teflon bladders and tubing. The riser of MW-3 is offset such that a bladder pump cannot be deployed, so groundwater samples were collected from MW-3 using a peristaltic pump with Teflon tubing. As noted during previous groundwater sampling events, MW-3 appears to have a disconnected riser below the ground surface but above the top of the water

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column. No repairs are scheduled for this well at this time. In accordance with low flow sampling protocol, groundwater was slowly purged from each of the wells prior to sampling until it was representative of groundwater within the aquifer. This determination was made by taking successive measurements of water quality parameters (dissolved oxygen [DO], temperature, conductivity, ORP, pH, and turbidity) to ensure that the groundwater had reached a steady state condition prior to sampling. Groundwater levels were measured throughout the purging of the wells to ensure that drawdown was minimized during the pumping and water was withdrawn from approximately the middle of the well screen or the middle of the water column (if the screened interval was not identifiable). Sampling logs are included as Attachment A.

Upon arrival for sample collection, the water level in each well was measured with a decontaminated water level tape and the well volume was calculated. Decontamination procedures, as described in the FSP (AECOM, 2019a), were followed for the water level tape between wells to remove any potential contaminants. A different, clean bladder pump was used at each monitoring well to prevent cross contamination. The dedicated bladder pump was then connected to the dedicated tubing, placed in the well, and activated for pumping at a low rate. The pumping rate was adjusted intermittently when required to ensure that the drawdown in the well was minimized. In-situ measurements were made using a calibrated YSI® multi-meter with a flow-thru cell, used in accordance with the manufacturer's specifications. The flow-thru cell was disconnected from the discharge line during sample collection.

Certified clean sample containers were provided by the analytical laboratories. Sample bottles were pre-preserved by the analytical lab using a preservative type and volume suitable to the analysis performed. Cross-contamination was avoided by using dedicated bladders and/or tubing in each of the wells. In this way, the water samples never came in contact with a bladder or piece of tubing that had contact with water from any other well.

Representative water samples were collected from each of the wells, and sample integrity was maintained until the samples were received by the analytical laboratories. A Field Replicate was collected from MW-01. A matrix spike/matric spike duplicate (MS/MSD) sample was collected from MW-06. In addition, an equipment blank was collected off a bladder pump with Teflon bladder and tubing and VOC samples were accompanied by a laboratory prepared trip blank. All samples were sent under chain of custody via courier to Alpha Analytical in Mansfield, Massachusetts.

In situ Water Quality Summary

Prior to sample collection, water quality parameters were measured during the initial purging of groundwater at each well. In situ measurements were made using a Yellow Springs Instruments (YSI®) multi-meter sonde and a flow-through cell. The YSI® sonde was calibrated and used according to the manufacturer's specifications. Once the diagnostic parameters had stabilized, sample collection was initiated. In situ measurements are summarized in Table 1.

Chemistry Water Quality Summary

Chemical analyses were performed according to the project Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) Addendum (AECOM, 2019b). Groundwater samples were analyzed for PCBs (as Aroclors), select metals (cadmium, chromium, copper, and lead), VOCs, and TSS. Analyses were performed by Alpha Analytical in Mansfield, Massachusetts

Sample results are summarized in Table 2 and are compared to the Massachusetts Contingency Plan (MCP) Method 1 Category GW-3 criteria for groundwater that has a potential to discharge to a

surface water body (Massachusetts Department of Environmental Protection [MADEP], 2017). Complete laboratory data packages with test results are provided in Attachment B.

Quality Control

Field and laboratory QC results for the 2019 groundwater survey are summarized below. The types of QC samples used to assess data quality are summarized in Table 3. Data quality was assessed in terms of accuracy/bias and precision. The project QAPP defined the validation levels as Tier 1 Stage 2A (PCB Aroclors, metals and VOC) or Tier 1 Stage 1 (TSS). The data validation was performed using EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures (April 2013), EPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review, January 2017, EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 and criteria listed in the task order QAPP.

The data have been determined to be useable for the purpose of assessing the presence/absence and quantitative concentrations of the analytes in the media tested (groundwater). Results of the validation are summarized in the data validation report are provided in Attachment C.

Summary

Monitoring was performed in September 2019 at the Sawyer Street CDF as part of an ongoing groundwater monitoring program. Groundwater levels, water quality parameters, organic contaminants, and metals were monitored and/or analyzed in all six wells at the facility. Concentrations of constituents of concern were either non-detect or were below the applicable MCP GW-3 criteria. Overall, groundwater data collected during the 2019 monitoring suggest that the integrity of the CDF is currently maintained.

References

AECOM, 2019a. Draft Final Groundwater Monitoring Field Sampling Plan. New Bedford Harbor Superfund Site, New Bedford, MA. Draft Final September 2019.

AECOM, 2019b. Draft Final Quality Assurance Project Plan Addendum Revision 10.0. Environmental Monitoring, Sampling, and Analysis. New Bedford Harbor Superfund Site, New Bedford, Massachusetts.

AECOM, 2019c. Accident Prevention Plan. Environmental Monitoring, Sampling, and Analysis. New Bedford Harbor Superfund Site, New Bedford, Massachusetts.

AECOM, 2019d. New Bedford Harbor Groundwater Monitoring – October 2018 Summary. New Bedford Harbor Superfund Site, New Bedford, Massachusetts.

EPA, 2017. EPA Region I Low Stress (flow) Purging and Sampling Groundwater Procedure for the Collection of Groundwater Samples from Monitoring Wells, Rev. 4, September 19, 2017.

Massachusetts Contingency Plan (MCP), 2017. Method 1 MCP GW-3 standard from 310 CMR 40.0974(2), December 2017.

Figures

N
W E
S

0 50 100 200 Feet

Well Locations

New Bedford Harbor Sawyer Street CDF Groundwater Well Locations

SCALE	DATE	PROJECT NO.
1:1300	11/18	60565200

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Figure Number

1

Tables

Table 1. Summary of In Situ Groundwater Data Collected Immediately Prior to Sampling

	Location ID:	**MW-1**	**MW-3**	**MW-4A**	**MW-5**	**MW-6**	**MW-7A**
	Sample ID:	**MW01-09231**	**MW03-092419**	**MW04A-092319**	**MW05-092319**	**MW06-092319**	**MW07A-092419**
	Date:	**9/23/2019**	**9/24/2019**	**9/23/2019**	**9/23/2019**	**9/23/2019**	**9/24/2019**
	Sample Time:	**14:20/14:25 (FD)**	**11:30**	**10:50**	**10:47**	**14:51**	**9:40**
Parameters	**Units**						
Depth to Water	ft	18.35	22.58	5.46	8.08	12.32	10.88
pH	--	7.06	6.27	7.36	7.61	7.29	6.57
Specific Conductivity	µS/cm	517	5698	6961	6133	2001	474
Temperature	°C	19.73	16.70	18.97	17.58	17.35	16.86
DO	mg/L	1.71	0.67	0.1	0.74	0.16	0.65
Turbidity	NTU	0.02	5.92	1.16	1.16	50.6	0.02
ORP	mV	-33.8	8.8	-340.1	-179.3	-157.7	68.9
Purge Volume	L	6.14	7.1	3.19	2.5	5.5	7.4
Flow Rate	mL/min	160	100	110	100	100	200
Color/Odor	--	clear/none	clear/none	clear/none	clear/none	very light orange/none	clear/none

Notes:
ft - feet
µS/cm - microsiemens per centimeter
°C - Celcius
mg/L - milligrams per liter
NTU - Nephelometric Turbidity Unit
mV - millivolts
L - liters
mL/min - milliliters per min

Table 2. PCB, Metal, VOC and TSS Groundwater Results with Final Qualifiers, September 2019 Sampling Event

			Location ID:	MW-1	MW-1	MW-3	MW-4A	MW-5	MW-6	MW-7A	EB-01	TB-01
			Sample ID:	MW01-092319	MW01-092319-REP	MW03-092419	MW04A-092319	MW05-092319	MW06-092319	MW07A-092419	EB-001-092319	TB-001-091819
			Type:	N	FD	N	N	N	N	N	EB	TB
			Date:	9/23/2019	9/23/2019	9/24/2019	9/23/2019	9/23/2019	9/23/2019	9/24/2019	9/23/2019	9/18/2019
Analyte	**CAS No.**	**Unit**	**MCP GW-3 (a)**									
Total Suspended Solids (TSS) - 2540D												
Total suspended solids	None	µg/L	--	5000 U	5000 U	9700	5000 U	5000 U	14000	5000 U	--	--
Metals - 6020B												
Cadmium, Total	7440-43-9	µg/L	4	0.3	0.3	1.7	0.2 U	0.2 U	0.2 U	0.3	0.2 U	--
Chromium, Total	7440-47-3	µg/L	300	1 U	1 U	3	1 U	1 U	1 U	1 U	1 U	--
Copper, Total	7440-50-8	µg/L	--	1	1	13	1 U	1 U	1 U	2	1 U	
Lead, Total	7439-92-1	µg/L	10	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Polychlorinated Biphenyls - 8082A												
Aroclor-1016	12674-11-2	µg/L	10	0.018 U	0.019 U	0.019 U	0.018 U	0.02 U	0.021 U	0.018 U	0.019 U	--
Aroclor-1221	11104-28-2	µg/L	10	0.018 U	0.019 U	0.019 U	0.018 U	0.02 U	0.021 U	0.018 U	0.019 U	--
Aroclor-1232	11141-16-5	µg/L	10	0.018 U	0.019 U	0.019 U	0.018 U	0.02 U	0.021 U	0.018 U	0.019 U	--
Aroclor-1242	53469-21-9	µg/L	10	0.018 U	0.019 U	0.019 U	0.043	0.02 U	0.021 U	0.018 U	0.019 U	--
Aroclor-1248	12672-29-6	µg/L	10	0.018 U	0.019 U	0.019 U	0.018 U	0.02 U	0.021 U	0.018 U	0.019 U	--
Aroclor-1254	11097-69-1	µg/L	10	0.019 U	0.019 U	0.02 U	0.019 U	0.02 U	0.021 U	0.019 U	0.02 U	--
Aroclor-1260	11096-82-5	µg/L	10	0.019 U	0.019 U	0.02 U	0.019 U	0.02 U	0.021 U	0.019 U	0.02 U	--
Aroclor-1262	37324-23-5	µg/L	10	0.019 U	0.019 U	0.02 U	0.019 U	0.02 U	0.021 U	0.019 U	0.02 U	--
Aroclor-1268	11100-14-4	µg/L	10	0.019 U	0.019 U	0.02 U	0.019 U	0.02 U	0.021 U	0.019 U	0.02 U	--
Total PCB	1336-36-3	µg/L	10	0.019 U	0.019 U	0.02 U	0.043	0.02 U	0.021 U	0.019 U	0.02 U	--
Volatile Organic Compounds (VOCs) - 8260B												
1,1,1,2-Tetrachloroethane	630-20-6	µg/L	50000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	71-55-6	µg/L	20000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	µg/L	50000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	µg/L	50000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	µg/L	20000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	µg/L	30000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	563-58-6	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,3-Trichlorobenzene	87-61-6	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,3-Trichloropropane	96-18-4	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trichlorobenzene	120-82-1	µg/L	50000	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trimethylbenzene	95-63-6	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dibromo-3-Chloropropane	96-12-8	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U	2 U
1,2-Dibromoethane	106-93-4	µg/L	50000	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene	95-50-1	µg/L	2000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	µg/L	20000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene, Total	540-59-0	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	µg/L	50000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	108-67-8	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene	541-73-1	µg/L	50000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane	142-28-9	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichloropropene, Total	542-75-6	µg/L	200	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
1,4-Dichlorobenzene	106-46-7	µg/L	8,000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dioxane (P-Dioxane)	123-91-1	µg/L	50000	250 U	250 U	250 U	250 U	250 U	250 UJ	250 U	250 U	250 U
2,2-Dichloropropane	594-20-7	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U	2 U
2-Butanone	78-93-3	µg/L	50000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	95-49-8	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-Hexanone	591-78-6	µg/L	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	106-43-4	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Methyl-2-Pentanone	108-10-1	µg/L	50000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

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			Location ID:	MW-1	MW-1	MW-3	MW-4A	MW-5	MW-6	MW-7A	EB-01	TB-01
			Sample ID:	MW01-092319	MW01-092319-REP	MW03-092419	MW04A-092319	MW05-092319	MW06-092319	MW07A-092419	EB-001-092319	TB-001-091819
			Type:	N	FD	N	N	N	N	N	EB	TB
			Date:	9/23/2019	9/23/2019	9/24/2019	9/23/2019	9/23/2019	9/23/2019	9/24/2019	9/23/2019	9/18/2019
Analyte	**CAS No.**	**Unit**	**MCP GW-3 (a)**									
Acetone	67-64-1	µg/L	50000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	71-43-2	µg/L	10000	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromochloromethane	74-97-5	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromodichloromethane	75-27-4	µg/L	50000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	75-25-2	µg/L	50000	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromomethane	74-83-9	µg/L	800	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U	2 U
Carbon Disulfide	75-15-0	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Carbon Tetrachloride	56-23-5	µg/L	5000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	µg/L	1000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	75-00-3	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloroform	67-66-3	µg/L	20000	1 U	1 U	0.25 J	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	74-87-3	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Cis-1,2-Dichloroethene	156-59-2	µg/L	50000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cis-1,3-Dichloropropene	10061-01-5	µg/L	200	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Di-Isopropyl Ether	108-20-3	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dibromochloromethane	124-48-1	µg/L	50000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromomethane	74-95-3	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dichlorodifluoromethane	75-71-8	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Diethyl Ether	60-29-7	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Ethyl Tertiary-Butyl Ether	637-92-3	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	100-41-4	µg/L	5000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	87-68-3	µg/L	3000	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Isopropylbenzene	98-82-8	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Methyl Tert-Butyl Ether	1634-04-4	µg/L	50000	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Methylene Chloride	75-09-2	µg/L	50000	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
N-Butylbenzene	104-51-8	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
N-Propylbenzene	103-65-1	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Naphthalene	91-20-3	µg/L	20000	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
O-Xylene	95-47-6	µg/L	5000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
P-Isopropyltoluene	99-87-6	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
P/M Xylene	179601-23-1	µg/L	5000	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Xylenes, Total	1330-20-7	µg/L	5000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Sec-Butylbenzene	135-98-8	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	100-42-5	µg/L	6000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tert-Butylbenzene	98-06-6	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Tertiary-Amyl Methyl Ether	994-05-8	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Tetrachloroethene	127-18-4	µg/L	30000	1 U	1 U	2.2	1 U	1 U	1 U	1 U	1 U	1 U
Tetrahydrofuran	109-99-9	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Toluene	108-88-3	µg/L	40000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,2-Dichloroethene	156-60-5	µg/L	50000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-Dichloropropene	10061-02-6	µg/L	200	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 UJ	0.4 U	0.4 U	0.4 U
Trichloroethene	79-01-6	µg/L	5000	1 U	1 U	0.44 J	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	75-69-4	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Vinyl Chloride	75-01-4	µg/L	50000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:
U - The analyte was not detected.
UJ - The analyte was not detected. The sample detection limit is an estimated value.
J - Estimated value.
µg/L - micrograms per liter
TSS -Total Suspended Solids
PCB - Polychlorinated Biphenyls
VOC - Volatile Organic Compounds
TB = Trip Blank
EB = Equipment Blank
FD = Field Duplicate
MCP = Massachusetts Contingency Plan
(a) Massachusetts Contingency Plan (MCP), Method 1 MCP GW-3 standard from 310 CMR 40.0974(2), December 2017.

Table 3. Summary of the Number of Sample Sets Required for Collection

Analyte	Analytical Method	Field Sample (1 per well)	Field Replicate	MS	MSD	Trip Blank	Equipment Blank	Sample Totals
VOC	EPA 8260	6	1	1	1	1	1	11
PCB Aroclors	EPA 8082	6	1	1	1	0	1	10
Metals	EPA 6020A	6	1	1	1	0	1	10
TSS	EPA 2540D	6	1	0	0	0	0	7

Attachment A

Monitoring Well Sampling Logs

Well ID: MW-01

Low Flow Ground Water Sample Collection Record

Client: USACoE Date: 9/23/19 Time: Start 1500 am/pm
Project No: 60597627 Finish 1430 am/pm
Site Location: NEW BEDFORD, MA
Weather Conds: WINDY; SUNNY; 70'S Collector(s): M. SMITH

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 24.13 c. Length of Water Column 8.04 (a-b) Casing Diameter/Material 2"

b. Water Table Depth 16.09 d. Calculated System Volume (see back) 1.31 gal

2. WELL PURGE DATA

a. Purge Method: BLADDER AND CONTROLLER

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	MPS 556	14F100059 / PROBE: 115562-4M
	GEO TECH	TURBIDITY METER	IB091877 IBADB
	QED	PRO SAMPLER BLADDER	170745

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1345	1.44	18.62	6.93	544	1.47	9.7	1.04	160	17.49	CLEAR/NONE
1350	2.14	19.55	6.99	541	1.33	1.6	0.78	160	17.90	
1355	2.94	19.63	7.11	537	1.55	-15.6	0.02	160	18.20	
1400	3.74	19.73	7.08	534	1.70	-21.6	0.02	160	18.25	
1405	4.54	19.69	7.09	524	1.75	-32.5	0.02	160	18.35	
1410	5.34	19.64	7.07	520	1.71	-33.1	0.02	160	18.41	
1415	6.14	19.73	7.06	517	1.71	-33.8	0.02	160	18.35	

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: BLADDER

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW01-092319		7	HCl, HNO_3, NONE	METALS, PCB, VOC, TSS	1420
MW01-DUP-092319-REP		7	HCl, HNO_3, NONE	METALS, PCB, VOC, TSS	1425

Comments START PUMPING @ 1336

Signature [signature] Date 9/23/19

Well ID: MW-3

Low Flow Ground Water Sample Collection Record

Client: USACoE Date: 9/24/19 Time: Start 1015 am/pm
Project No: Finish ____ am/pm
Site Location: NEW BEDFORD, MA
Weather Conds: SUNNY, BREEZY, 60s-70s Collector(s): M. SMITH

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 24.02 c. Length of Water Column 10.4 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 13.62 d. Calculated System Volume (see back) 1.69 gal

2. WELL PURGE DATA

a. Purge Method: PERISTALTIC PUMP

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	±1.0 unit	- ORP	±10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

YSI 556 MPS

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1030	1.05	15.99	6.54	7583	0.91	-66.0	3.99	150	15.51	CLEAR/NONE
1035	1.80	15.82	6.50	7581	1.00	-67.0	4.41	150	16.33	
1040	2.40	15.93	6.51	7552	2.07	-57.0	5.14	120	17.08	
1045	3.0	15.85	6.53	7531	1.23	-43.1	5.12	120	17.93	
1050	3.6	15.86	6.54	7477	0.80	-31.6	4.02	120	18.82	
1055	4.1	15.86	6.52	7437	0.53	-22.2	5.34	100	19.57	
1100	4.6	16.19	6.48	7240	0.41	-14.2	5.30	100	20.34	

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☒
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

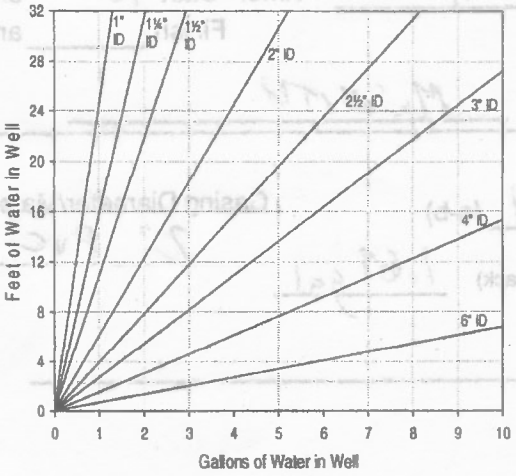
3. SAMPLE COLLECTION: Method: PERISTALTIC PUMP

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW03-092419	VOA	3	HCl	VOC	1130
	AMBER 250-ml POLY	2	NONE HNO3	8082 PCB METALS	
	1L POLY		NONE	TSS	

Comments START PUMPING @ 1023

Signature _____ Date 9/24/19

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

MW-3

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1105	5.1	16.37	6.41	6735	0.40	-6.6	6.24	100	20.11	CLEAR/NONE
1110	5.6	16.54	6.31	6113	0.49	3.8	7.24	100	21.88	
1115	6.1	16.62	6.28	5892	0.61	6.6	7.63	100	22.14	
1120	6.6	16.68	6.27	5704	0.64	8.3	6.28	100	22.31	
1125	7.1	16.70	6.27	5698	0.67	8.8	5.92	100	22.58	

Well ID: MW-4A

Low Flow Ground Water Sample Collection Record

Client: USACOE Date: 9/23/19 Time: Start 1000 am/pm
Project No: 60597627 Finish 1130 am/pm
Site Location: NEW BEDFORD, MA
Weather Conds: WINDY, SUNNY, 60s-70s Collector(s): M. SMITH

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 23.78 c. Length of Water Column 13.86 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 9.92 d. Calculated System Volume (see back) 2.26 gal

2. WELL PURGE DATA

a. Purge Method: BLADDER PUMP

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make / Model / Serial Number

YSI 556 MPS / 14F1100059 / PROBE: 11562-4M 18A0B
GEO TECH TURB METER / 18091874
NEW SAMPLE PRO BLADDER / 10745

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1015	.44	18.76	7.27	6393	0.27	-301.9	6.91	110	9.71	CLEAR/NONE
1020	.99	18.38	7.36	7091	0.14	-321.2	6.93	110	10.65	
1030	1.54	18.60	7.48	6986	0.16	-333.3	6.92	110	7.45	
1035	2.09	18.69	7.34	7040	0.12	-333.8	4.55	110	5.45	
1040	2.64	18.93	7.35	6965	0.11	-339.4	1.12	110	5.45	
1045	3.19	18.97	7.36	6961	0.10	-340.1	1.16	110	5.46	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

(continued on back)

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: BLADDER PUMP

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW04A-092319	VOA	3	HCl	VOC	1050
	1 L POLY	1	—	TSS	
	0.5 L AMBER	2	—	8082 PCB	
	250mL POLY	1	HNO_3	METALS	

Comments CHANGED AIR TANK @ 1020

Signature [signature] Date 9/23/19

Well ID: MW05

Low Flow Ground Water Sample Collection Record

Client: USACE - NBH Sampling Date: 09/23/2019 Time: Start 1000 am/pm
Project No: 60597627 Finish 1120 am/pm
Site Location: New Bedford, MA
Weather Conds: Windy, 70°F, clear Collector(s): Patrick Fehlner

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 18.55 c. Length of Water Column 9.62' (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 8.93' d. Calculated System Volume (see back) 5.94 Liters

2. WELL PURGE DATA

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	Geotech	turbidimeter	19101887
	QED MICROPURGE DADIC	MP10	2252AL
	QED SAMPLE PRO		4030-1133
	YSI	556 MPS	Unit: 09D100420 / PODC: 600336-4M

total volume

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1016	0.5/0.5	17.89	7.44	6147	0.63	-137.8	6.93	100	0.25	clear/none
1021	0.5/1.0	17.69	7.54	6145	0.74	-159.6	3.59	100	0.14	clear/none
1026	0.5/1.5	17.72	7.58	6120	0.76	-176.8	5.75	100	0.16	clear/none
1031	0.5/2.0	17.65	7.59	6128	0.72	-178.2	1.20	100	0.15	clear/none
1036	0.5/2.5	17.58	7.61	6133	0.74	-179.3	1.16	100	0.15	clear/none
SAMPLE @	1047									

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Low Flow Bladder Pump

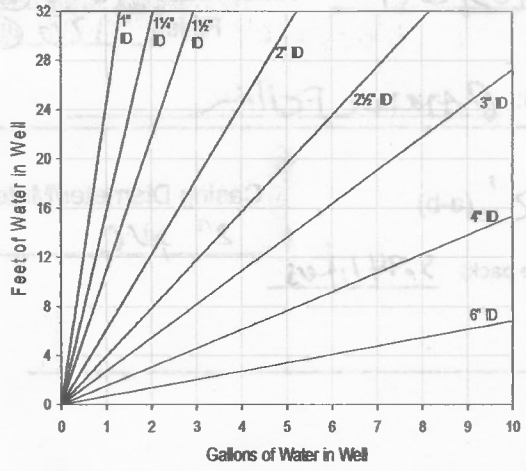
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW05-092319	VOA	3	HCL	MCP-8260-10	1047
MW05-092319	0.5L Amber Glass	2	NONE	AZ-MCP-8082-10	1047
MW05-092319	0.25L Plastic	1	HNO_3	TOTAL METALS	1047
MW05-092319	1.0L PLASTIC	1	NONE	TSS-8540	1047

Comments

Signature Patrick Fehlner Date 09/23/2019

09/23/2019 MW-05

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

RWP 09/23/2019

Well ID: MW06

Low Flow Ground Water Sample Collection Record

Client: USACE - NBH SUPERFUND SITE Date: 09/23/2019 Time: Start 1345 am/pm
Project No: 60597627 Finish 1600 am/pm
Site Location: New Bedford, MA
Weather Conds: Windy, 75°F, Clear Collector(s): Patrick Fellion

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 19.06' c. Length of Water Column 6.34' (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 12.72' d. Calculated System Volume (see back) 3.92 liters

2. WELL PURGE DATA

a. Purge Method: LOW FLOW BLADDER PUMP

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
Geotech	turbidimeter	1801887
QED MicroPurge Basic	MP10	2252AL
QED SAMPLE PRO		4030-1133
YSI 556 MPS		unit 09D100420 / probe 6 00336-4m

Time (24hr)	Volume Remove (Liters) / total volume removed	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1356	0.5/0.5	18.54	7.26	2023	0.34	-157.3	231	100	0.56	light orange / none
1401	0.5/1.0	17.94	7.23	2008	0.26	-156.7	213	100	-0.03	light orange / none
1406	0.5/1.5	17.84	7.24	2039	0.24	-157.3	145	100	0.00	light orange / none
1411	0.5/2.0	17.76	7.25	2055	0.23	-157.4	109	100	0.00	light orange / none
1416	0.5/2.5	17.62	7.25	2060	0.19	-156.5	84.3	100	0.00	light orange / none
1421	0.5/3.0	17.56	7.25	2051	0.21	-156.3	69.9	100	0.00	light orange / none
1426	0.5/3.5	17.48	7.26	2026	0.19	-156.8	57.1	100	0.00	light orange / none

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: LOW FLOW BLADDER PUMP

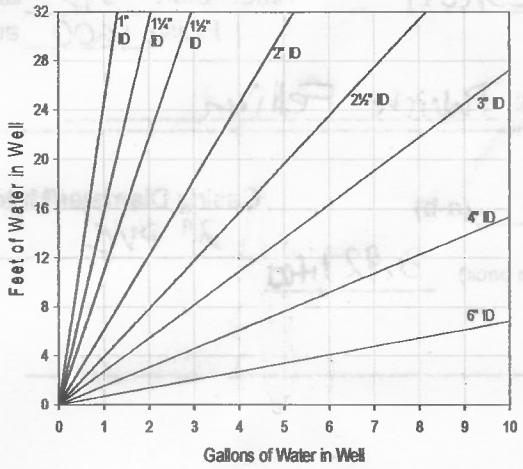
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW06-092319	VOA	9	HCL	MCP-8260-10	1451
MW06-092319	0.5 Liter Amber Glass	6	NONE	AZ-MCP-8082-10	1451
MW06-092319	0.25 Liter Plastic	3	HNO_3	TOTAL METALS	1451
MW06-092319	1.0 Liter Plastic	1	NONE	TSS-8540	1451

Comments

Signature Pat Fellion Date 09/23/2019

09/23/2019 MW06

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1431	0.5/4.0	17.54	7.27	2020	0.18	-156.8	54.9	100	0.00	light orange/none
1436	0.5/4.5	17.46	7.25	2018	0.17	-155.8	53.0	100	-0.07	Very light orange/None
1441	0.5/5.0	17.41	7.29	2009	0.17	-158.0	51.8	100	-0.03	Very light orange/None
1446	0.5/5.5	17.35	7.29	2001	0.16	-157.7	50.6	100	-0.03	Very light orange/none
SAMPLE @ 1451										

09/23/2019

Well ID: MW-7A

Low Flow Ground Water Sample Collection Record

Client: USACoE Date: 9/24/19 Time: Start 0815 am/pm
Project No: Finish 1000 am/pm
Site Location: NEW BEDFORD MA
Weather Conds: BREEZY; SUNNY; 60's-70s Collector(s): M. SMITH

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 14.37 c. Length of Water Column 3.83 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 10.54 d. Calculated System Volume (see back) 0.625 gal

2. WELL PURGE DATA

a. Purge Method: BLADDER

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make / Model / Serial Number

YSI 556 MPS 14F100059 / PROBE: 15562AM 18408
GEO TECH TURB. METER

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0905	1.4	17.25	6.73	470	4.40	136.4	2.37	200	10.81	CLEAR/NONE
0910	2.4	16.94	6.38	455	1.88	117.7	1.40	200	10.89	
0915	3.4	16.94	6.47	458	1.50	103.2	0.82	200	10.88	
0920	4.4	16.89	6.53	465	0.88	90.8	0.02	200	10.89	
0925	5.4	16.88	6.57	470	0.68	80.1	0.02	200	10.88	
0930	6.4	16.86	6.57	472	0.68	73.4	0.02	200	10.89	
0935	7.4	16.86	6.57	474	0.65	68.9	0.02	200	10.88	

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method:

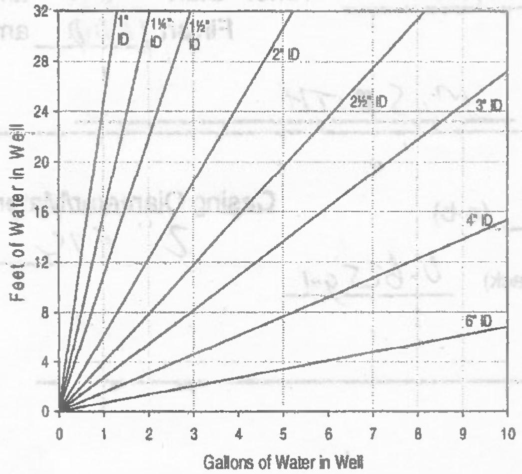
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW07A-092419	VOA	3	HCl	VOC	0940
	AMBER	2	NONE	8082 PCB	
	250m POLY	1	HNO3	METALS	
	1L POLY	1	NONE	TSS	

Comments START PUMPING @ 0858

Signature Date 9/24/19

MW-7A

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

Attachment B

Laboratory Report

ANALYTICAL REPORT

Lab Number:	L1944139
Client:	AECOM 250 Apollo Drive Chelmsford, MA 01824
ATTN:	Will Humphries
Phone:	(978) 833-6950
Project Name:	NBH-CDF GROUNDWATER SAMPLING
Project Number:	60597627
Report Date:	01/16/20

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Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

Six Park Row, Mansfield, MA 02048
508-261-7467 (Fax) -- -- - emccarter@mansfieldma.com

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627

Lab Number: L1944139
Report Date: 01/16/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1944139-01	MW01-092319	GROUNDWATER	NEW BEDFORD, MA	09/23/19 14:20	09/24/19
L1944139-02	MW01-092319-REP	GROUNDWATER	NEW BEDFORD, MA	09/23/19 14:25	09/24/19
L1944139-03	MW03-092419	GROUNDWATER	NEW BEDFORD, MA	09/24/19 11:30	09/24/19
L1944139-04	MW04A-092319	GROUNDWATER	NEW BEDFORD, MA	09/23/19 10:50	09/24/19
L1944139-05	MW05-092319	GROUNDWATER	NEW BEDFORD, MA	09/23/19 10:47	09/24/19
L1944139-06	MW06-092319	GROUNDWATER	NEW BEDFORD, MA	09/23/19 14:51	09/24/19
L1944139-07	MW07A-092419	GROUNDWATER	NEW BEDFORD, MA	09/24/19 09:40	09/24/19
L1944139-08	EB-001-092319	WATER	NEW BEDFORD, MA	09/23/19 16:20	09/24/19
L1944139-09	TB-001-091819	WATER	NEW BEDFORD, MA	09/18/19 12:00	09/24/19

Project Name:	NBH-CDF GROUNDWATER SAMPLING	**Lab Number:**	L1944139
Project Number:	60597627	**Report Date:**	01/16/20

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name:	NBH-CDF GROUNDWATER SAMPLING	**Lab Number:**	L1944139
Project Number:	60597627	**Report Date:**	01/16/20

Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	NBH-CDF GROUNDWATER SAMPLING	**Lab Number:**	L1944139
Project Number:	60597627	**Report Date:**	01/16/20

Case Narrative (continued)

Report Reissue

This report replaces the report issued on January 15, 2020. The Metals reported has been reduced to Total cadmium, chromium, copper, and lead.

This report replaces the report issued on October 15, 2019. Total copper has been added to the Metals report.

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

MCP Related Narratives

Volatile Organics

In reference to question H:

The initial calibration, associated with L1944139-01 through -09, utilized a quadratic fit for chloroethane.

The initial calibration, associated with L1944139-01 through -09, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0025), as well as the average response factor for 1,4-dioxane.

The initial calibration verification, associated with L1944139-01 through -09, is outside acceptance criteria for acrolein (67%).

The continuing calibration standard, associated with L1944139-01 through -09, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

The WG1292231-6/-7 MS/MSD recoveries, performed on L1944139-06, are outside the acceptance criteria for trans-1,3-dichloropropene (67%-MS), bromomethane (48%/56%), 2,2-dichloropropane (57%/64%) and 1,2-dibromo-3-chloropropane (69%-MS) and 1,4-dioxane (56%-MSD); however, the associated LCS/LCSD recoveries are within overall method allowances. No further action was required. In addition, the WG1292231-6/-7 MS/MSD RPD is outside the acceptance criteria for 1,4-dioxane (44%).

Project Name:	NBH-CDF GROUNDWATER SAMPLING	**Lab Number:**	L1944139
Project Number:	60597627	**Report Date:**	01/16/20

Case Narrative (continued)

Total Metals

In reference to question I:

All samples were analyzed for a subset of MCP elements per the Client request.

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

Authorized Signature:  Elizabeth Porta

Title: Technical Director/Representative Date: 01/16/20

QC OUTLIER SUMMARY REPORT

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627

Lab Number: L1944139
Report Date: 01/16/20

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
MCP Volatile Organics - Westborough Lab								
8260C	Batch QC (L1944139-06)	WG1292231-6	trans-1,3-Dichloropropene	MS	67	70-130	01-09	potential low bias
8260C	Batch QC (L1944139-06)	WG1292231-6	Bromomethane	MS	48	70-130	01-09	potential low bias
8260C	Batch QC (L1944139-06)	WG1292231-6	2,2-Dichloropropane	MS	57	70-130	01-09	potential low bias
8260C	Batch QC (L1944139-06)	WG1292231-6	1,2-Dibromo-3-chloropropane	MS	69	70-130	01-09	potential low bias
8260C	Batch QC (L1944139-06)	WG1292231-7	Bromomethane	MSD	56	70-130	01-09	potential low bias
8260C	Batch QC (L1944139-06)	WG1292231-7	2,2-Dichloropropane	MSD	64	70-130	01-09	potential low bias
8260C	Batch QC (L1944139-06)	WG1292231-7	1,4-Dioxane	MSD	44	20	01-09	non-directional bias
8260C	Batch QC (L1944139-06)	WG1292231-7	1,4-Dioxane	MSD	56	70-130	01-09	potential low bias

ORGANICS

VOLATILES

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-01
Client ID: MW01-092319
Sample Location: NEW BEDFORD, MA

Date Collected: 09/23/19 14:20
Date Received: 09/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 97,8260C
Analytical Date: 10/04/19 10:45
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	0.68	1
1,1-Dichloroethane	ND		ug/l	1.0	0.21	1
Chloroform	ND		ug/l	1.0	0.22	1
Carbon tetrachloride	ND		ug/l	1.0	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	1.0	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14	1
Tetrachloroethene	ND		ug/l	1.0	0.18	1
Chlorobenzene	ND		ug/l	1.0	0.18	1
Trichlorofluoromethane	ND		ug/l	2.0	0.16	1
1,2-Dichloroethane	ND		ug/l	1.0	0.13	1
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16	1
Bromodichloromethane	ND		ug/l	1.0	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14	1
1,1-Dichloropropene	ND		ug/l	2.0	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	1.0	0.20	1
Ethylbenzene	ND		ug/l	1.0	0.17	1
Chloromethane	ND		ug/l	2.0	0.20	1
Bromomethane	ND		ug/l	2.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.0	0.13	1
1,1-Dichloroethene	ND		ug/l	1.0	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16	1

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-01 Date Collected: 09/23/19 14:20

Client ID: MW01-092319 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	0.18	1
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18	1
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19	1
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19	1
Methyl tert butyl ether	ND		ug/l	2.0	0.17	1
p/m-Xylene	ND		ug/l	2.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19	1
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16	1
Dibromomethane	ND		ug/l	2.0	0.36	1
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	2.0	0.24	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	2.0	0.30	1
Methyl ethyl ketone	ND		ug/l	5.0	1.9	1
Methyl isobutyl ketone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Bromochloromethane	ND		ug/l	2.0	0.15	1
Tetrahydrofuran	ND		ug/l	2.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.0	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.0	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16	1
Bromobenzene	ND		ug/l	2.0	0.15	1
n-Butylbenzene	ND		ug/l	2.0	0.19	1
sec-Butylbenzene	ND		ug/l	2.0	0.18	1
tert-Butylbenzene	ND		ug/l	2.0	0.20	1
o-Chlorotoluene	ND		ug/l	2.0	0.22	1
p-Chlorotoluene	ND		ug/l	2.0	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35	1
Hexachlorobutadiene	ND		ug/l	0.60	0.22	1
Isopropylbenzene	ND		ug/l	2.0	0.19	1
p-Isopropyltoluene	ND		ug/l	2.0	0.19	1
Naphthalene	ND		ug/l	2.0	0.22	1
n-Propylbenzene	ND		ug/l	2.0	0.17	1

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-01 Date Collected: 09/23/19 14:20

Client ID: MW01-092319 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	0.19	1
Diethyl ether	ND		ug/l	2.0	0.16	1
Diisopropyl Ether	ND		ug/l	2.0	0.42	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28	1
1,4-Dioxane	ND		ug/l	250	61.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	103		70-130

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-02
Client ID: MW01-092319-REP
Sample Location: NEW BEDFORD, MA

Date Collected: 09/23/19 14:25
Date Received: 09/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 97,8260C
Analytical Date: 10/04/19 11:17
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	0.68	1
1,1-Dichloroethane	ND		ug/l	1.0	0.21	1
Chloroform	ND		ug/l	1.0	0.22	1
Carbon tetrachloride	ND		ug/l	1.0	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	1.0	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14	1
Tetrachloroethene	ND		ug/l	1.0	0.18	1
Chlorobenzene	ND		ug/l	1.0	0.18	1
Trichlorofluoromethane	ND		ug/l	2.0	0.16	1
1,2-Dichloroethane	ND		ug/l	1.0	0.13	1
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16	1
Bromodichloromethane	ND		ug/l	1.0	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14	1
1,1-Dichloropropene	ND		ug/l	2.0	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	1.0	0.20	1
Ethylbenzene	ND		ug/l	1.0	0.17	1
Chloromethane	ND		ug/l	2.0	0.20	1
Bromomethane	ND		ug/l	2.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.0	0.13	1
1,1-Dichloroethene	ND		ug/l	1.0	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16	1

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-02 Date Collected: 09/23/19 14:25

Client ID: MW01-092319-REP Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	0.18	1
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18	1
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19	1
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19	1
Methyl tert butyl ether	ND		ug/l	2.0	0.17	1
p/m-Xylene	ND		ug/l	2.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19	1
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16	1
Dibromomethane	ND		ug/l	2.0	0.36	1
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	2.0	0.24	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	2.0	0.30	1
Methyl ethyl ketone	ND		ug/l	5.0	1.9	1
Methyl isobutyl ketone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Bromochloromethane	ND		ug/l	2.0	0.15	1
Tetrahydrofuran	ND		ug/l	2.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.0	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.0	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16	1
Bromobenzene	ND		ug/l	2.0	0.15	1
n-Butylbenzene	ND		ug/l	2.0	0.19	1
sec-Butylbenzene	ND		ug/l	2.0	0.18	1
tert-Butylbenzene	ND		ug/l	2.0	0.20	1
o-Chlorotoluene	ND		ug/l	2.0	0.22	1
p-Chlorotoluene	ND		ug/l	2.0	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35	1
Hexachlorobutadiene	ND		ug/l	0.60	0.22	1
Isopropylbenzene	ND		ug/l	2.0	0.19	1
p-Isopropyltoluene	ND		ug/l	2.0	0.19	1
Naphthalene	ND		ug/l	2.0	0.22	1
n-Propylbenzene	ND		ug/l	2.0	0.17	1

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-02 Date Collected: 09/23/19 14:25

Client ID: MW01-092319-REP Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	0.19	1
Diethyl ether	ND		ug/l	2.0	0.16	1
Diisopropyl Ether	ND		ug/l	2.0	0.42	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28	1
1,4-Dioxane	ND		ug/l	250	61.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	103		70-130

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-03 Date Collected: 09/24/19 11:30
Client ID: MW03-092419 Date Received: 09/24/19
Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 97,8260C
Analytical Date: 10/04/19 13:27
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	0.68	1
1,1-Dichloroethane	ND		ug/l	1.0	0.21	1
Chloroform	0.25	J	ug/l	1.0	0.22	1
Carbon tetrachloride	ND		ug/l	1.0	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	1.0	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14	1
Tetrachloroethene	2.2		ug/l	1.0	0.18	1
Chlorobenzene	ND		ug/l	1.0	0.18	1
Trichlorofluoromethane	ND		ug/l	2.0	0.16	1
1,2-Dichloroethane	ND		ug/l	1.0	0.13	1
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16	1
Bromodichloromethane	ND		ug/l	1.0	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14	1
1,1-Dichloropropene	ND		ug/l	2.0	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	1.0	0.20	1
Ethylbenzene	ND		ug/l	1.0	0.17	1
Chloromethane	ND		ug/l	2.0	0.20	1
Bromomethane	ND		ug/l	2.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.0	0.13	1
1,1-Dichloroethene	ND		ug/l	1.0	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16	1

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-03 Date Collected: 09/24/19 11:30

Client ID: MW03-092419 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	0.44	J	ug/l	1.0	0.18	1
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18	1
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19	1
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19	1
Methyl tert butyl ether	ND		ug/l	2.0	0.17	1
p/m-Xylene	ND		ug/l	2.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19	1
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16	1
Dibromomethane	ND		ug/l	2.0	0.36	1
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	2.0	0.24	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	2.0	0.30	1
Methyl ethyl ketone	ND		ug/l	5.0	1.9	1
Methyl isobutyl ketone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Bromochloromethane	ND		ug/l	2.0	0.15	1
Tetrahydrofuran	ND		ug/l	2.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.0	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.0	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16	1
Bromobenzene	ND		ug/l	2.0	0.15	1
n-Butylbenzene	ND		ug/l	2.0	0.19	1
sec-Butylbenzene	ND		ug/l	2.0	0.18	1
tert-Butylbenzene	ND		ug/l	2.0	0.20	1
o-Chlorotoluene	ND		ug/l	2.0	0.22	1
p-Chlorotoluene	ND		ug/l	2.0	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35	1
Hexachlorobutadiene	ND		ug/l	0.60	0.22	1
Isopropylbenzene	ND		ug/l	2.0	0.19	1
p-Isopropyltoluene	ND		ug/l	2.0	0.19	1
Naphthalene	ND		ug/l	2.0	0.22	1
n-Propylbenzene	ND		ug/l	2.0	0.17	1

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-03 Date Collected: 09/24/19 11:30

Client ID: MW03-092419 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	0.19	1
Diethyl ether	ND		ug/l	2.0	0.16	1
Diisopropyl Ether	ND		ug/l	2.0	0.42	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28	1
1,4-Dioxane	ND		ug/l	250	61.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	105		70-130

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-04
Client ID: MW04A-092319
Sample Location: NEW BEDFORD, MA

Date Collected: 09/23/19 10:50
Date Received: 09/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 97,8260C
Analytical Date: 10/04/19 11:50
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	0.68	1
1,1-Dichloroethane	ND		ug/l	1.0	0.21	1
Chloroform	ND		ug/l	1.0	0.22	1
Carbon tetrachloride	ND		ug/l	1.0	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	1.0	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14	1
Tetrachloroethene	ND		ug/l	1.0	0.18	1
Chlorobenzene	ND		ug/l	1.0	0.18	1
Trichlorofluoromethane	ND		ug/l	2.0	0.16	1
1,2-Dichloroethane	ND		ug/l	1.0	0.13	1
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16	1
Bromodichloromethane	ND		ug/l	1.0	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14	1
1,1-Dichloropropene	ND		ug/l	2.0	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	1.0	0.20	1
Ethylbenzene	ND		ug/l	1.0	0.17	1
Chloromethane	ND		ug/l	2.0	0.20	1
Bromomethane	ND		ug/l	2.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.0	0.13	1
1,1-Dichloroethene	ND		ug/l	1.0	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16	1

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-04 Date Collected: 09/23/19 10:50

Client ID: MW04A-092319 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	0.18	1
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18	1
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19	1
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19	1
Methyl tert butyl ether	ND		ug/l	2.0	0.17	1
p/m-Xylene	ND		ug/l	2.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19	1
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16	1
Dibromomethane	ND		ug/l	2.0	0.36	1
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	2.0	0.24	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	2.0	0.30	1
Methyl ethyl ketone	ND		ug/l	5.0	1.9	1
Methyl isobutyl ketone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Bromochloromethane	ND		ug/l	2.0	0.15	1
Tetrahydrofuran	ND		ug/l	2.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.0	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.0	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16	1
Bromobenzene	ND		ug/l	2.0	0.15	1
n-Butylbenzene	ND		ug/l	2.0	0.19	1
sec-Butylbenzene	ND		ug/l	2.0	0.18	1
tert-Butylbenzene	ND		ug/l	2.0	0.20	1
o-Chlorotoluene	ND		ug/l	2.0	0.22	1
p-Chlorotoluene	ND		ug/l	2.0	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35	1
Hexachlorobutadiene	ND		ug/l	0.60	0.22	1
Isopropylbenzene	ND		ug/l	2.0	0.19	1
p-Isopropyltoluene	ND		ug/l	2.0	0.19	1
Naphthalene	ND		ug/l	2.0	0.22	1
n-Propylbenzene	ND		ug/l	2.0	0.17	1

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-04 Date Collected: 09/23/19 10:50

Client ID: MW04A-092319 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	0.19	1
Diethyl ether	ND		ug/l	2.0	0.16	1
Diisopropyl Ether	ND		ug/l	2.0	0.42	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28	1
1,4-Dioxane	ND		ug/l	250	61.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	104		70-130

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-05
Client ID: MW05-092319
Sample Location: NEW BEDFORD, MA

Date Collected: 09/23/19 10:47
Date Received: 09/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 97,8260C
Analytical Date: 10/04/19 12:22
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	0.68	1
1,1-Dichloroethane	ND		ug/l	1.0	0.21	1
Chloroform	ND		ug/l	1.0	0.22	1
Carbon tetrachloride	ND		ug/l	1.0	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	1.0	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14	1
Tetrachloroethene	ND		ug/l	1.0	0.18	1
Chlorobenzene	ND		ug/l	1.0	0.18	1
Trichlorofluoromethane	ND		ug/l	2.0	0.16	1
1,2-Dichloroethane	ND		ug/l	1.0	0.13	1
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16	1
Bromodichloromethane	ND		ug/l	1.0	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14	1
1,1-Dichloropropene	ND		ug/l	2.0	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	1.0	0.20	1
Ethylbenzene	ND		ug/l	1.0	0.17	1
Chloromethane	ND		ug/l	2.0	0.20	1
Bromomethane	ND		ug/l	2.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.0	0.13	1
1,1-Dichloroethene	ND		ug/l	1.0	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16	1

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-05 Date Collected: 09/23/19 10:47

Client ID: MW05-092319 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	0.18	1
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18	1
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19	1
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19	1
Methyl tert butyl ether	ND		ug/l	2.0	0.17	1
p/m-Xylene	ND		ug/l	2.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19	1
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16	1
Dibromomethane	ND		ug/l	2.0	0.36	1
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	2.0	0.24	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	2.0	0.30	1
Methyl ethyl ketone	ND		ug/l	5.0	1.9	1
Methyl isobutyl ketone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Bromochloromethane	ND		ug/l	2.0	0.15	1
Tetrahydrofuran	ND		ug/l	2.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.0	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.0	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16	1
Bromobenzene	ND		ug/l	2.0	0.15	1
n-Butylbenzene	ND		ug/l	2.0	0.19	1
sec-Butylbenzene	ND		ug/l	2.0	0.18	1
tert-Butylbenzene	ND		ug/l	2.0	0.20	1
o-Chlorotoluene	ND		ug/l	2.0	0.22	1
p-Chlorotoluene	ND		ug/l	2.0	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35	1
Hexachlorobutadiene	ND		ug/l	0.60	0.22	1
Isopropylbenzene	ND		ug/l	2.0	0.19	1
p-Isopropyltoluene	ND		ug/l	2.0	0.19	1
Naphthalene	ND		ug/l	2.0	0.22	1
n-Propylbenzene	ND		ug/l	2.0	0.17	1

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-05 Date Collected: 09/23/19 10:47

Client ID: MW05-092319 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	0.19	1
Diethyl ether	ND		ug/l	2.0	0.16	1
Diisopropyl Ether	ND		ug/l	2.0	0.42	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28	1
1,4-Dioxane	ND		ug/l	250	61.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	105		70-130

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-06
Client ID: MW06-092319
Sample Location: NEW BEDFORD, MA

Date Collected: 09/23/19 14:51
Date Received: 09/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 97,8260C
Analytical Date: 10/04/19 10:12
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	0.68	1
1,1-Dichloroethane	ND		ug/l	1.0	0.21	1
Chloroform	ND		ug/l	1.0	0.22	1
Carbon tetrachloride	ND		ug/l	1.0	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	1.0	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14	1
Tetrachloroethene	ND		ug/l	1.0	0.18	1
Chlorobenzene	ND		ug/l	1.0	0.18	1
Trichlorofluoromethane	ND		ug/l	2.0	0.16	1
1,2-Dichloroethane	ND		ug/l	1.0	0.13	1
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16	1
Bromodichloromethane	ND		ug/l	1.0	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14	1
1,1-Dichloropropene	ND		ug/l	2.0	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	1.0	0.20	1
Ethylbenzene	ND		ug/l	1.0	0.17	1
Chloromethane	ND		ug/l	2.0	0.20	1
Bromomethane	ND		ug/l	2.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.0	0.13	1
1,1-Dichloroethene	ND		ug/l	1.0	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16	1

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-06 Date Collected: 09/23/19 14:51

Client ID: MW06-092319 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	0.18	1
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18	1
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19	1
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19	1
Methyl tert butyl ether	ND		ug/l	2.0	0.17	1
p/m-Xylene	ND		ug/l	2.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19	1
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16	1
Dibromomethane	ND		ug/l	2.0	0.36	1
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	2.0	0.24	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	2.0	0.30	1
Methyl ethyl ketone	ND		ug/l	5.0	1.9	1
Methyl isobutyl ketone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Bromochloromethane	ND		ug/l	2.0	0.15	1
Tetrahydrofuran	ND		ug/l	2.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.0	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.0	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16	1
Bromobenzene	ND		ug/l	2.0	0.15	1
n-Butylbenzene	ND		ug/l	2.0	0.19	1
sec-Butylbenzene	ND		ug/l	2.0	0.18	1
tert-Butylbenzene	ND		ug/l	2.0	0.20	1
o-Chlorotoluene	ND		ug/l	2.0	0.22	1
p-Chlorotoluene	ND		ug/l	2.0	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35	1
Hexachlorobutadiene	ND		ug/l	0.60	0.22	1
Isopropylbenzene	ND		ug/l	2.0	0.19	1
p-Isopropyltoluene	ND		ug/l	2.0	0.19	1
Naphthalene	ND		ug/l	2.0	0.22	1
n-Propylbenzene	ND		ug/l	2.0	0.17	1

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-06 Date Collected: 09/23/19 14:51

Client ID: MW06-092319 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	0.19	1
Diethyl ether	ND		ug/l	2.0	0.16	1
Diisopropyl Ether	ND		ug/l	2.0	0.42	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28	1
1,4-Dioxane	ND		ug/l	250	61.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	104		70-130

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-07 Date Collected: 09/24/19 09:40
Client ID: MW07A-092419 Date Received: 09/24/19
Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 97,8260C
Analytical Date: 10/04/19 12:55
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	0.68	1
1,1-Dichloroethane	ND		ug/l	1.0	0.21	1
Chloroform	ND		ug/l	1.0	0.22	1
Carbon tetrachloride	ND		ug/l	1.0	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	1.0	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14	1
Tetrachloroethene	ND		ug/l	1.0	0.18	1
Chlorobenzene	ND		ug/l	1.0	0.18	1
Trichlorofluoromethane	ND		ug/l	2.0	0.16	1
1,2-Dichloroethane	ND		ug/l	1.0	0.13	1
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16	1
Bromodichloromethane	ND		ug/l	1.0	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14	1
1,1-Dichloropropene	ND		ug/l	2.0	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	1.0	0.20	1
Ethylbenzene	ND		ug/l	1.0	0.17	1
Chloromethane	ND		ug/l	2.0	0.20	1
Bromomethane	ND		ug/l	2.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.0	0.13	1
1,1-Dichloroethene	ND		ug/l	1.0	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16	1

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-07 Date Collected: 09/24/19 09:40

Client ID: MW07A-092419 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	0.18	1
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18	1
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19	1
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19	1
Methyl tert butyl ether	ND		ug/l	2.0	0.17	1
p/m-Xylene	ND		ug/l	2.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19	1
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16	1
Dibromomethane	ND		ug/l	2.0	0.36	1
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	2.0	0.24	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	2.0	0.30	1
Methyl ethyl ketone	ND		ug/l	5.0	1.9	1
Methyl isobutyl ketone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Bromochloromethane	ND		ug/l	2.0	0.15	1
Tetrahydrofuran	ND		ug/l	2.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.0	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.0	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16	1
Bromobenzene	ND		ug/l	2.0	0.15	1
n-Butylbenzene	ND		ug/l	2.0	0.19	1
sec-Butylbenzene	ND		ug/l	2.0	0.18	1
tert-Butylbenzene	ND		ug/l	2.0	0.20	1
o-Chlorotoluene	ND		ug/l	2.0	0.22	1
p-Chlorotoluene	ND		ug/l	2.0	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35	1
Hexachlorobutadiene	ND		ug/l	0.60	0.22	1
Isopropylbenzene	ND		ug/l	2.0	0.19	1
p-Isopropyltoluene	ND		ug/l	2.0	0.19	1
Naphthalene	ND		ug/l	2.0	0.22	1
n-Propylbenzene	ND		ug/l	2.0	0.17	1

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-07 Date Collected: 09/24/19 09:40

Client ID: MW07A-092419 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	0.19	1
Diethyl ether	ND		ug/l	2.0	0.16	1
Diisopropyl Ether	ND		ug/l	2.0	0.42	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28	1
1,4-Dioxane	ND		ug/l	250	61.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	102		70-130

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-08
Client ID: EB-001-092319
Sample Location: NEW BEDFORD, MA

Date Collected: 09/23/19 16:20
Date Received: 09/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 10/04/19 09:40
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	0.68	1
1,1-Dichloroethane	ND		ug/l	1.0	0.21	1
Chloroform	ND		ug/l	1.0	0.22	1
Carbon tetrachloride	ND		ug/l	1.0	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	1.0	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14	1
Tetrachloroethene	ND		ug/l	1.0	0.18	1
Chlorobenzene	ND		ug/l	1.0	0.18	1
Trichlorofluoromethane	ND		ug/l	2.0	0.16	1
1,2-Dichloroethane	ND		ug/l	1.0	0.13	1
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16	1
Bromodichloromethane	ND		ug/l	1.0	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14	1
1,1-Dichloropropene	ND		ug/l	2.0	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	1.0	0.20	1
Ethylbenzene	ND		ug/l	1.0	0.17	1
Chloromethane	ND		ug/l	2.0	0.20	1
Bromomethane	ND		ug/l	2.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.0	0.13	1
1,1-Dichloroethene	ND		ug/l	1.0	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16	1

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-08 Date Collected: 09/23/19 16:20

Client ID: EB-001-092319 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	0.18	1
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18	1
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19	1
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19	1
Methyl tert butyl ether	ND		ug/l	2.0	0.17	1
p/m-Xylene	ND		ug/l	2.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19	1
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16	1
Dibromomethane	ND		ug/l	2.0	0.36	1
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	2.0	0.24	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	2.0	0.30	1
Methyl ethyl ketone	ND		ug/l	5.0	1.9	1
Methyl isobutyl ketone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Bromochloromethane	ND		ug/l	2.0	0.15	1
Tetrahydrofuran	ND		ug/l	2.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.0	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.0	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16	1
Bromobenzene	ND		ug/l	2.0	0.15	1
n-Butylbenzene	ND		ug/l	2.0	0.19	1
sec-Butylbenzene	ND		ug/l	2.0	0.18	1
tert-Butylbenzene	ND		ug/l	2.0	0.20	1
o-Chlorotoluene	ND		ug/l	2.0	0.22	1
p-Chlorotoluene	ND		ug/l	2.0	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35	1
Hexachlorobutadiene	ND		ug/l	0.60	0.22	1
Isopropylbenzene	ND		ug/l	2.0	0.19	1
p-Isopropyltoluene	ND		ug/l	2.0	0.19	1
Naphthalene	ND		ug/l	2.0	0.22	1
n-Propylbenzene	ND		ug/l	2.0	0.17	1

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-08 Date Collected: 09/23/19 16:20

Client ID: EB-001-092319 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	0.19	1
Diethyl ether	ND		ug/l	2.0	0.16	1
Diisopropyl Ether	ND		ug/l	2.0	0.42	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28	1
1,4-Dioxane	ND		ug/l	250	61.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	103		70-130

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-09
Client ID: TB-001-091819
Sample Location: NEW BEDFORD, MA

Date Collected: 09/18/19 12:00
Date Received: 09/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 10/04/19 09:07
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	0.68	1
1,1-Dichloroethane	ND		ug/l	1.0	0.21	1
Chloroform	ND		ug/l	1.0	0.22	1
Carbon tetrachloride	ND		ug/l	1.0	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	1.0	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14	1
Tetrachloroethene	ND		ug/l	1.0	0.18	1
Chlorobenzene	ND		ug/l	1.0	0.18	1
Trichlorofluoromethane	ND		ug/l	2.0	0.16	1
1,2-Dichloroethane	ND		ug/l	1.0	0.13	1
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16	1
Bromodichloromethane	ND		ug/l	1.0	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14	1
1,1-Dichloropropene	ND		ug/l	2.0	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	1.0	0.20	1
Ethylbenzene	ND		ug/l	1.0	0.17	1
Chloromethane	ND		ug/l	2.0	0.20	1
Bromomethane	ND		ug/l	2.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.0	0.13	1
1,1-Dichloroethene	ND		ug/l	1.0	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16	1

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-09 Date Collected: 09/18/19 12:00

Client ID: TB-001-091819 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	0.18	1
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18	1
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19	1
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19	1
Methyl tert butyl ether	ND		ug/l	2.0	0.17	1
p/m-Xylene	ND		ug/l	2.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19	1
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16	1
Dibromomethane	ND		ug/l	2.0	0.36	1
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	2.0	0.24	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	2.0	0.30	1
Methyl ethyl ketone	ND		ug/l	5.0	1.9	1
Methyl isobutyl ketone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Bromochloromethane	ND		ug/l	2.0	0.15	1
Tetrahydrofuran	ND		ug/l	2.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.0	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.0	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16	1
Bromobenzene	ND		ug/l	2.0	0.15	1
n-Butylbenzene	ND		ug/l	2.0	0.19	1
sec-Butylbenzene	ND		ug/l	2.0	0.18	1
tert-Butylbenzene	ND		ug/l	2.0	0.20	1
o-Chlorotoluene	ND		ug/l	2.0	0.22	1
p-Chlorotoluene	ND		ug/l	2.0	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35	1
Hexachlorobutadiene	ND		ug/l	0.60	0.22	1
Isopropylbenzene	ND		ug/l	2.0	0.19	1
p-Isopropyltoluene	ND		ug/l	2.0	0.19	1
Naphthalene	ND		ug/l	2.0	0.22	1
n-Propylbenzene	ND		ug/l	2.0	0.17	1

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-09 Date Collected: 09/18/19 12:00

Client ID: TB-001-091819 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	0.19	1
Diethyl ether	ND		ug/l	2.0	0.16	1
Diisopropyl Ether	ND		ug/l	2.0	0.42	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28	1
1,4-Dioxane	ND		ug/l	250	61.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	101		70-130

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 10/04/19 05:20
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-09 Batch: WG1292231-5					
Methylene chloride	ND		ug/l	2.0	0.68
1,1-Dichloroethane	ND		ug/l	1.0	0.21
Chloroform	ND		ug/l	1.0	0.22
Carbon tetrachloride	ND		ug/l	1.0	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	1.0	0.15
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14
Tetrachloroethene	ND		ug/l	1.0	0.18
Chlorobenzene	ND		ug/l	1.0	0.18
Trichlorofluoromethane	ND		ug/l	2.0	0.16
1,2-Dichloroethane	ND		ug/l	1.0	0.13
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16
Bromodichloromethane	ND		ug/l	1.0	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14
1,1-Dichloropropene	ND		ug/l	2.0	0.24
Bromoform	ND		ug/l	2.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	1.0	0.20
Ethylbenzene	ND		ug/l	1.0	0.17
Chloromethane	ND		ug/l	2.0	0.20
Bromomethane	ND		ug/l	2.0	0.26
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.0	0.13
1,1-Dichloroethene	ND		ug/l	1.0	0.17
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16
Trichloroethene	ND		ug/l	1.0	0.18

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 10/04/19 05:20
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-09 Batch: WG1292231-5					
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19
Methyl tert butyl ether	ND		ug/l	2.0	0.17
p/m-Xylene	ND		ug/l	2.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16
Dibromomethane	ND		ug/l	2.0	0.36
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18
Styrene	ND		ug/l	1.0	0.36
Dichlorodifluoromethane	ND		ug/l	2.0	0.24
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	2.0	0.30
Methyl ethyl ketone	ND		ug/l	5.0	1.9
Methyl isobutyl ketone	ND		ug/l	5.0	0.42
2-Hexanone	ND		ug/l	5.0	0.52
Bromochloromethane	ND		ug/l	2.0	0.15
Tetrahydrofuran	ND		ug/l	2.0	0.52
2,2-Dichloropropane	ND		ug/l	2.0	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
1,3-Dichloropropane	ND		ug/l	2.0	0.21
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16
Bromobenzene	ND		ug/l	2.0	0.15
n-Butylbenzene	ND		ug/l	2.0	0.19
sec-Butylbenzene	ND		ug/l	2.0	0.18
tert-Butylbenzene	ND		ug/l	2.0	0.20
o-Chlorotoluene	ND		ug/l	2.0	0.22

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 10/04/19 05:20
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-09 Batch: WG1292231-5					
p-Chlorotoluene	ND		ug/l	2.0	0.18
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35
Hexachlorobutadiene	ND		ug/l	0.60	0.22
Isopropylbenzene	ND		ug/l	2.0	0.19
p-Isopropyltoluene	ND		ug/l	2.0	0.19
Naphthalene	ND		ug/l	2.0	0.22
n-Propylbenzene	ND		ug/l	2.0	0.17
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22
1,3,5-Trimethylbenzene	ND		ug/l	2.0	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.0	0.19
Diethyl ether	ND		ug/l	2.0	0.16
Diisopropyl Ether	ND		ug/l	2.0	0.42
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28
1,4-Dioxane	ND		ug/l	250	61.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	102		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: NBH-CDF GROUNDWATER SAMPLING

Project Number: 60597627

Lab Number: L1944139

Report Date: 01/16/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-09 Batch: WG1292231-3 WG1292231-4								
Methylene chloride	100		99		70-130	1		20
1,1-Dichloroethane	100		100		70-130	0		20
Chloroform	96		95		70-130	1		20
Carbon tetrachloride	92		94		70-130	2		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	100		98		70-130	2		20
1,1,2-Trichloroethane	98		98		70-130	0		20
Tetrachloroethene	100		99		70-130	1		20
Chlorobenzene	96		96		70-130	0		20
Trichlorofluoromethane	97		100		70-130	3		20
1,2-Dichloroethane	96		95		70-130	1		20
1,1,1-Trichloroethane	97		98		70-130	1		20
Bromodichloromethane	98		97		70-130	1		20
trans-1,3-Dichloropropene	89		91		70-130	2		20
cis-1,3-Dichloropropene	98		97		70-130	1		20
1,1-Dichloropropene	95		94		70-130	1		20
Bromoform	98		97		70-130	1		20
1,1,2,2-Tetrachloroethane	96		100		70-130	4		20
Benzene	100		100		70-130	0		20
Toluene	97		98		70-130	1		20
Ethylbenzene	96		97		70-130	1		20
Chloromethane	92		93		70-130	1		20
Bromomethane	120		99		70-130	19		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: NBH-CDF GROUNDWATER SAMPLING

Project Number: 60597627

Lab Number: L1944139

Report Date: 01/16/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-09 Batch: WG1292231-3 WG1292231-4								
Vinyl chloride	100		100		70-130	0		20
Chloroethane	93		95		70-130	2		20
1,1-Dichloroethene	98		100		70-130	2		20
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	100		100		70-130	0		20
1,2-Dichlorobenzene	96		94		70-130	2		20
1,3-Dichlorobenzene	96		95		70-130	1		20
1,4-Dichlorobenzene	95		94		70-130	1		20
Methyl tert butyl ether	95		97		70-130	2		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	100		95		70-130	5		20
cis-1,2-Dichloroethene	100		100		70-130	0		20
Dibromomethane	100		97		70-130	3		20
1,2,3-Trichloropropane	94		94		70-130	0		20
Styrene	100		100		70-130	0		20
Dichlorodifluoromethane	89		92		70-130	3		20
Acetone	110		110		70-130	0		20
Carbon disulfide	96		98		70-130	2		20
Methyl ethyl ketone	110		110		70-130	0		20
Methyl isobutyl ketone	97		100		70-130	3		20
2-Hexanone	98		100		70-130	2		20
Bromochloromethane	110		100		70-130	10		20
Tetrahydrofuran	110		110		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: NBH-CDF GROUNDWATER SAMPLING

Project Number: 60597627

Lab Number: L1944139

Report Date: 01/16/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-09 Batch: WG1292231-3 WG1292231-4								
2,2-Dichloropropane	86		88		70-130	2		20
1,2-Dibromoethane	97		96		70-130	1		20
1,3-Dichloropropane	97		96		70-130	1		20
1,1,1,2-Tetrachloroethane	98		97		70-130	1		20
Bromobenzene	95		93		70-130	2		20
n-Butylbenzene	90		89		70-130	1		20
sec-Butylbenzene	92		92		70-130	0		20
tert-Butylbenzene	92		93		70-130	1		20
o-Chlorotoluene	92		93		70-130	1		20
p-Chlorotoluene	91		92		70-130	1		20
1,2-Dibromo-3-chloropropane	93		87		70-130	7		20
Hexachlorobutadiene	92		91		70-130	1		20
Isopropylbenzene	93		94		70-130	1		20
p-Isopropyltoluene	93		91		70-130	2		20
Naphthalene	100		100		70-130	0		20
n-Propylbenzene	93		95		70-130	2		20
1,2,3-Trichlorobenzene	96		93		70-130	3		20
1,2,4-Trichlorobenzene	95		92		70-130	3		20
1,3,5-Trimethylbenzene	95		94		70-130	1		20
1,2,4-Trimethylbenzene	94		93		70-130	1		20
Diethyl ether	97		98		70-130	1		20
Diisopropyl Ether	100		100		70-130	0		20
Ethyl-Tert-Butyl-Ether	96		96		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: NBH-CDF GROUNDWATER SAMPLING

Project Number: 60597627

Lab Number: L1944139

Report Date: 01/16/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-09 Batch: WG1292231-3 WG1292231-4								
Tertiary-Amyl Methyl Ether	92		91		70-130	1		20
1,4-Dioxane	104		102		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	91		92		70-130
Toluene-d8	96		98		70-130
4-Bromofluorobenzene	95		98		70-130
Dibromofluoromethane	102		101		70-130

Matrix Spike Analysis
Batch Quality Control

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627
Lab Number: L1944139
Report Date: 01/16/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab	Associated sample(s): 01-09	QC Batch ID: WG1292231-6				WG1292231-7		QC Sample: L1944139-06			Client ID: MW06-092319	
Methylene chloride	ND	10	8.4	84		9.2	92		70-130	9		20
1,1-Dichloroethane	ND	10	8.8	88		9.8	98		70-130	11		20
Chloroform	ND	10	8.1	81		8.8	88		70-130	8		20
Carbon tetrachloride	ND	10	7.9	79		8.6	86		70-130	8		20
1,2-Dichloropropane	ND	10	8.5	85		9.2	92		70-130	8		20
Dibromochloromethane	ND	10	7.9	79		8.7	87		70-130	10		20
1,1,2-Trichloroethane	ND	10	8.0	80		8.7	87		70-130	8		20
Tetrachloroethene	ND	10	8.0	80		8.7	87		70-130	8		20
Chlorobenzene	ND	10	7.8	78		8.4	84		70-130	7		20
Trichlorofluoromethane	ND	10	8.5	85		9.2	92		70-130	8		20
1,2-Dichloroethane	ND	10	8.0	80		8.5	85		70-130	6		20
1,1,1-Trichloroethane	ND	10	8.4	84		9.1	91		70-130	8		20
Bromodichloromethane	ND	10	8.1	81		8.8	88		70-130	8		20
trans-1,3-Dichloropropene	ND	10	6.7	**67**	Q	7.2	72		70-130	7		20
cis-1,3-Dichloropropene	ND	10	7.6	76		8.4	84		70-130	10		20
1,1-Dichloropropene	ND	10	7.3	73		8.0	80		70-130	9		20
Bromoform	ND	10	7.8	78		8.3	83		70-130	6		20
1,1,2,2-Tetrachloroethane	ND	10	8.0	80		8.4	84		70-130	5		20
Benzene	ND	10	8.6	86		9.4	94		70-130	9		20
Toluene	ND	10	8.0	80		8.6	86		70-130	7		20
Ethylbenzene	ND	10	8.0	80		8.7	87		70-130	8		20
Chloromethane	ND	10	8.6	86		9.4	94		70-130	9		20
Bromomethane	ND	10	4.8	**48**	Q	5.6	**56**	Q	70-130	15		20

Matrix Spike Analysis
Batch Quality Control

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627
Lab Number: L1944139
Report Date: 01/16/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab	Associated sample(s): 01-09		QC Batch ID: WG1292231-6			WG1292231-7		QC Sample: L1944139-06			Client ID: MW06-092319	
Vinyl chloride	ND	10	8.9	89		9.6	96		70-130	8		20
Chloroethane	ND	10	8.2	82		8.2	82		70-130	0		20
1,1-Dichloroethene	ND	10	8.6	86		9.4	94		70-130	9		20
trans-1,2-Dichloroethene	ND	10	8.8	88		9.6	96		70-130	9		20
Trichloroethene	ND	10	8.8	88		9.5	95		70-130	8		20
1,2-Dichlorobenzene	ND	10	7.6	76		8.3	83		70-130	9		20
1,3-Dichlorobenzene	ND	10	7.9	79		8.4	84		70-130	6		20
1,4-Dichlorobenzene	ND	10	7.6	76		8.2	82		70-130	8		20
Methyl tert butyl ether	ND	10	7.7	77		8.3	83		70-130	8		20
p/m-Xylene	ND	20	16	80		18	90		70-130	12		20
o-Xylene	ND	20	16	80		17	85		70-130	6		20
cis-1,2-Dichloroethene	ND	10	8.6	86		9.4	94		70-130	9		20
Dibromomethane	ND	10	8.0	80		9.1	91		70-130	13		20
1,2,3-Trichloropropane	ND	10	7.8	78		8.2	82		70-130	5		20
Styrene	ND	20	16	80		17	85		70-130	6		20
Dichlorodifluoromethane	ND	10	7.8	78		8.6	86		70-130	10		20
Acetone	ND	10	9.3	93		10	100		70-130	7		20
Carbon disulfide	ND	10	8.5	85		9.3	93		70-130	9		20
Methyl ethyl ketone	ND	10	9.1	91		9.8	98		70-130	7		20
Methyl isobutyl ketone	ND	10	7.8	78		8.3	83		70-130	6		20
2-Hexanone	ND	10	7.8	78		8.3	83		70-130	6		20
Bromochloromethane	ND	10	8.6	86		9.4	94		70-130	9		20
Tetrahydrofuran	ND	10	8.9	89		9.5	95		70-130	7		20

Matrix Spike Analysis

Batch Quality Control

Project Name: NBH-CDF GROUNDWATER SAMPLING

Project Number: 60597627

Lab Number: L1944139

Report Date: 01/16/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab	Associated sample(s): 01-09	QC Batch ID: WG1292231-6				WG1292231-7		QC Sample: L1944139-06			Client ID: MW06-092319	
2,2-Dichloropropane	ND	10	5.7	**57**	Q	6.4	**64**	Q	70-130	12		20
1,2-Dibromoethane	ND	10	7.5	75		8.2	82		70-130	9		20
1,3-Dichloropropane	ND	10	7.8	78		8.3	83		70-130	6		20
1,1,1,2-Tetrachloroethane	ND	10	7.8	78		8.4	84		70-130	7		20
Bromobenzene	ND	10	7.7	77		8.3	83		70-130	8		20
n-Butylbenzene	ND	10	7.4	74		7.9	79		70-130	7		20
sec-Butylbenzene	ND	10	7.7	77		8.3	83		70-130	8		20
tert-Butylbenzene	ND	10	7.8	78		8.4	84		70-130	7		20
o-Chlorotoluene	ND	10	7.6	76		8.3	83		70-130	9		20
p-Chlorotoluene	ND	10	7.5	75		8.1	81		70-130	8		20
1,2-Dibromo-3-chloropropane	ND	10	6.9	**69**	Q	7.3	73		70-130	6		20
Hexachlorobutadiene	ND	10	7.5	75		7.9	79		70-130	5		20
Isopropylbenzene	ND	10	7.7	77		8.4	84		70-130	9		20
p-Isopropyltoluene	ND	10	7.5	75		8.1	81		70-130	8		20
Naphthalene	ND	10	7.5	75		8.6	86		70-130	14		20
n-Propylbenzene	ND	10	7.8	78		8.4	84		70-130	7		20
1,2,3-Trichlorobenzene	ND	10	7.4	74		7.8	78		70-130	5		20
1,2,4-Trichlorobenzene	ND	10	7.2	72		7.9	79		70-130	9		20
1,3,5-Trimethylbenzene	ND	10	7.6	76		8.3	83		70-130	9		20
1,2,4-Trimethylbenzene	ND	10	7.5	75		8.2	82		70-130	9		20
Diethyl ether	ND	10	7.9	79		8.7	87		70-130	10		20
Diisopropyl Ether	ND	10	8.6	86		9.3	93		70-130	8		20
Ethyl-Tert-Butyl-Ether	ND	10	7.6	76		8.3	83		70-130	9		20

Matrix Spike Analysis

Batch Quality Control

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627
Lab Number: L1944139
Report Date: 01/16/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-09 QC Batch ID: WG1292231-6 WG1292231-7 QC Sample: L1944139-06 Client ID: MW06-092319												
Tertiary-Amyl Methyl Ether	ND	10	7.3	73		7.9	79		70-130	8		20
1,4-Dioxane	ND	500	440	88		280	**56**	Q	70-130	**44**	Q	20

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		94		70-130
4-Bromofluorobenzene	95		96		70-130
Dibromofluoromethane	103		103		70-130
Toluene-d8	96		96		70-130

PCBS

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-01
Client ID: MW01-092319
Sample Location: NEW BEDFORD, MA

Date Collected: 09/23/19 14:20
Date Received: 09/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 1,8082A
Analytical Date: 09/27/19 12:04
Analyst: DP

Extraction Method: EPA 3510C
Extraction Date: 09/26/19 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/l	0.018	0.007	1	A
Aroclor 1221	ND		ug/l	0.018	0.009	1	A
Aroclor 1232	ND		ug/l	0.018	0.008	1	A
Aroclor 1242	ND		ug/l	0.018	0.009	1	A
Aroclor 1248	ND		ug/l	0.018	0.009	1	A
Aroclor 1254	ND		ug/l	0.019	0.007	1	A
Aroclor 1260	ND		ug/l	0.019	0.009	1	A
Aroclor 1262	ND		ug/l	0.019	0.007	1	A
Aroclor 1268	ND		ug/l	0.019	0.004	1	A
PCBs, Total	ND		ug/l	0.019	0.004	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	46		30-150	B
DCB - Surrogate	51		30-150	B
Tetrachloro-meta-Xylene	53		30-150	A
DCB - Surrogate	56		30-150	A

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627
Lab Number: L1944139
Report Date: 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-02
Client ID: MW01-092319-REP
Sample Location: NEW BEDFORD, MA

Date Collected: 09/23/19 14:25
Date Received: 09/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 1,8082A
Analytical Date: 09/27/19 12:15
Analyst: DP

Extraction Method: EPA 3510C
Extraction Date: 09/26/19 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/l	0.019	0.007	1	A
Aroclor 1221	ND		ug/l	0.019	0.009	1	A
Aroclor 1232	ND		ug/l	0.019	0.008	1	A
Aroclor 1242	ND		ug/l	0.019	0.009	1	A
Aroclor 1248	ND		ug/l	0.019	0.009	1	A
Aroclor 1254	ND		ug/l	0.019	0.007	1	A
Aroclor 1260	ND		ug/l	0.019	0.009	1	A
Aroclor 1262	ND		ug/l	0.019	0.007	1	A
Aroclor 1268	ND		ug/l	0.019	0.004	1	A
PCBs, Total	ND		ug/l	0.019	0.004	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	47		30-150	B
DCB - Surrogate	54		30-150	B
Tetrachloro-meta-Xylene	53		30-150	A
DCB - Surrogate	59		30-150	A

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627
Lab Number: L1944139
Report Date: 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-03
Client ID: MW03-092419
Sample Location: NEW BEDFORD, MA

Date Collected: 09/24/19 11:30
Date Received: 09/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 1,8082A
Analytical Date: 09/27/19 12:27
Analyst: DP

Extraction Method: EPA 3510C
Extraction Date: 09/26/19 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/l	0.019	0.008	1	A
Aroclor 1221	ND		ug/l	0.019	0.009	1	A
Aroclor 1232	ND		ug/l	0.019	0.008	1	A
Aroclor 1242	ND		ug/l	0.019	0.009	1	A
Aroclor 1248	ND		ug/l	0.019	0.009	1	A
Aroclor 1254	ND		ug/l	0.020	0.007	1	A
Aroclor 1260	ND		ug/l	0.020	0.009	1	A
Aroclor 1262	ND		ug/l	0.020	0.007	1	A
Aroclor 1268	ND		ug/l	0.020	0.004	1	A
PCBs, Total	ND		ug/l	0.020	0.004	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	46		30-150	B
DCB - Surrogate	45		30-150	B
Tetrachloro-meta-Xylene	52		30-150	A
DCB - Surrogate	53		30-150	A

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-04
Client ID: MW04A-092319
Sample Location: NEW BEDFORD, MA

Date Collected: 09/23/19 10:50
Date Received: 09/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 1,8082A
Analytical Date: 09/27/19 19:32
Analyst: DP

Extraction Method: EPA 3510C
Extraction Date: 09/26/19 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/l	0.018	0.007	1	A
Aroclor 1221	ND		ug/l	0.018	0.009	1	A
Aroclor 1232	ND		ug/l	0.018	0.008	1	A
Aroclor 1242	0.043		ug/l	0.018	0.009	1	B
Aroclor 1248	ND		ug/l	0.018	0.009	1	A
Aroclor 1254	ND		ug/l	0.019	0.007	1	A
Aroclor 1260	ND		ug/l	0.019	0.009	1	A
Aroclor 1262	ND		ug/l	0.019	0.007	1	A
Aroclor 1268	ND		ug/l	0.019	0.004	1	A
PCBs, Total	0.043		ug/l	0.019	0.004	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	55		30-150	B
DCB - Surrogate	73		30-150	B
Tetrachloro-meta-Xylene	64		30-150	A
DCB - Surrogate	91		30-150	A

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627
Lab Number: L1944139
Report Date: 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-05
Client ID: MW05-092319
Sample Location: NEW BEDFORD, MA

Date Collected: 09/23/19 10:47
Date Received: 09/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 1,8082A
Analytical Date: 09/27/19 19:44
Analyst: DP

Extraction Method: EPA 3510C
Extraction Date: 09/26/19 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/l	0.020	0.008	1	A
Aroclor 1221	ND		ug/l	0.020	0.010	1	A
Aroclor 1232	ND		ug/l	0.020	0.008	1	A
Aroclor 1242	ND		ug/l	0.020	0.010	1	A
Aroclor 1248	ND		ug/l	0.020	0.009	1	A
Aroclor 1254	ND		ug/l	0.020	0.007	1	A
Aroclor 1260	ND		ug/l	0.020	0.009	1	A
Aroclor 1262	ND		ug/l	0.020	0.007	1	A
Aroclor 1268	ND		ug/l	0.020	0.004	1	A
PCBs, Total	ND		ug/l	0.020	0.004	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	58		30-150	B
DCB - Surrogate	59		30-150	B
Tetrachloro-meta-Xylene	69		30-150	A
DCB - Surrogate	69		30-150	A

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-06
Client ID: MW06-092319
Sample Location: NEW BEDFORD, MA

Date Collected: 09/23/19 14:51
Date Received: 09/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 1,8082A
Analytical Date: 09/27/19 13:03
Analyst: DP

Extraction Method: EPA 3510C
Extraction Date: 09/26/19 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/l	0.021	0.008	1	A
Aroclor 1221	ND		ug/l	0.021	0.010	1	A
Aroclor 1232	ND		ug/l	0.021	0.009	1	A
Aroclor 1242	ND		ug/l	0.021	0.010	1	A
Aroclor 1248	ND		ug/l	0.021	0.010	1	A
Aroclor 1254	ND		ug/l	0.021	0.008	1	A
Aroclor 1260	ND		ug/l	0.021	0.010	1	A
Aroclor 1262	ND		ug/l	0.021	0.008	1	A
Aroclor 1268	ND		ug/l	0.021	0.004	1	A
PCBs, Total	ND		ug/l	0.021	0.004	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	55		30-150	B
DCB - Surrogate	61		30-150	B
Tetrachloro-meta-Xylene	60		30-150	A
DCB - Surrogate	70		30-150	A

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627
Lab Number: L1944139
Report Date: 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-07
Client ID: MW07A-092419
Sample Location: NEW BEDFORD, MA

Date Collected: 09/24/19 09:40
Date Received: 09/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 1,8082A
Analytical Date: 09/27/19 13:15
Analyst: DP

Extraction Method: EPA 3510C
Extraction Date: 09/26/19 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/l	0.018	0.007	1	A
Aroclor 1221	ND		ug/l	0.018	0.009	1	A
Aroclor 1232	ND		ug/l	0.018	0.008	1	A
Aroclor 1242	ND		ug/l	0.018	0.009	1	A
Aroclor 1248	ND		ug/l	0.018	0.009	1	A
Aroclor 1254	ND		ug/l	0.019	0.007	1	A
Aroclor 1260	ND		ug/l	0.019	0.009	1	A
Aroclor 1262	ND		ug/l	0.019	0.007	1	A
Aroclor 1268	ND		ug/l	0.019	0.004	1	A
PCBs, Total	ND		ug/l	0.019	0.004	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	48		30-150	B
DCB - Surrogate	52		30-150	B
Tetrachloro-meta-Xylene	54		30-150	A
DCB - Surrogate	60		30-150	A

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-08
Client ID: EB-001-092319
Sample Location: NEW BEDFORD, MA

Date Collected: 09/23/19 16:20
Date Received: 09/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 09/27/19 13:26
Analyst: DP

Extraction Method: EPA 3510C
Extraction Date: 09/26/19 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/l	0.019	0.008	1	A
Aroclor 1221	ND		ug/l	0.019	0.009	1	A
Aroclor 1232	ND		ug/l	0.019	0.008	1	A
Aroclor 1242	ND		ug/l	0.019	0.009	1	A
Aroclor 1248	ND		ug/l	0.019	0.009	1	A
Aroclor 1254	ND		ug/l	0.020	0.007	1	A
Aroclor 1260	ND		ug/l	0.020	0.009	1	A
Aroclor 1262	ND		ug/l	0.020	0.007	1	A
Aroclor 1268	ND		ug/l	0.020	0.004	1	A
PCBs, Total	ND		ug/l	0.020	0.004	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	56		30-150	B
DCB - Surrogate	62		30-150	B
Tetrachloro-meta-Xylene	65		30-150	A
DCB - Surrogate	73		30-150	A

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627
Lab Number: L1944139
Report Date: 01/16/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 09/27/19 10:17
Analyst: DP

Extraction Method: EPA 3510C
Extraction Date: 09/26/19 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Mansfield Lab for sample(s): 01-08 Batch: WG1288878-1						
Aroclor 1016	ND		ug/l	0.020	0.008	A
Aroclor 1221	ND		ug/l	0.020	0.010	A
Aroclor 1232	ND		ug/l	0.020	0.008	A
Aroclor 1242	ND		ug/l	0.020	0.009	A
Aroclor 1248	ND		ug/l	0.020	0.009	A
Aroclor 1254	ND		ug/l	0.020	0.007	A
Aroclor 1260	ND		ug/l	0.020	0.009	A
Aroclor 1262	ND		ug/l	0.020	0.007	A
Aroclor 1268	ND		ug/l	0.020	0.004	A
PCBs, Total	ND		ug/l	0.020	0.004	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	67		30-150	B
DCB - Surrogate	64		30-150	B
Tetrachloro-meta-Xylene	79		30-150	A
DCB - Surrogate	88		30-150	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: NBH-CDF GROUNDWATER SAMPLING

Project Number: 60597627

Lab Number: L1944139

Report Date: 01/16/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Mansfield Lab Associated sample(s): 01-08 Batch: WG1288878-2 WG1288878-3									
Aroclor 1016	70		77		40-140	9		50	A
Aroclor 1260	85		85		40-140	0		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	65		64		30-150	B
DCB - Surrogate	70		68		30-150	B
Tetrachloro-meta-Xylene	78		85		30-150	A
DCB - Surrogate	95		100		30-150	A

Matrix Spike Analysis

Batch Quality Control

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627
Lab Number: L1944139
Report Date: 01/16/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG1288878-4 WG1288878-5 QC Sample: L1944139-06 Client ID: MW06-092319													
Aroclor 1016	ND	0.962	0.583	61		0.602	59		40-140	3		50	A
Aroclor 1260	ND	0.962	0.610	63		0.711	70		40-140	15		50	A

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
DCB - Surrogate	57		59		30-150	B
Tetrachloro-meta-Xylene	55		57		30-150	B
DCB - Surrogate	65		69		30-150	A
Tetrachloro-meta-Xylene	66		67		30-150	A

METALS

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-01 Date Collected: 09/23/19 14:20

Client ID: MW01-092319 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Matrix: Groundwater

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Cadmium, Total	0.0003		mg/l	0.0002	0.0002	1	09/25/19 12:56	10/07/19 17:11	EPA 3005A	97,6020B	AM
Chromium, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 17:11	EPA 3005A	97,6020B	AM
Copper, Total	0.001		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 17:11	EPA 3005A	97,6020B	AM
Lead, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 17:11	EPA 3005A	97,6020B	AM

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-02 Date Collected: 09/23/19 14:25

Client ID: MW01-092319-REP Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Matrix: Groundwater

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Cadmium, Total	0.0003		mg/l	0.0002	0.0002	1	09/25/19 12:56	10/07/19 17:15	EPA 3005A	97,6020B	AM
Chromium, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 17:15	EPA 3005A	97,6020B	AM
Copper, Total	0.001		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 17:15	EPA 3005A	97,6020B	AM
Lead, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 17:15	EPA 3005A	97,6020B	AM

Project Name: NBH-CDF GROUNDWATER SAMPLING
Lab Number: L1944139
Project Number: 60597627
Report Date: 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-03
Client ID: MW03-092419
Sample Location: NEW BEDFORD, MA
Date Collected: 09/24/19 11:30
Date Received: 09/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Cadmium, Total	0.0017		mg/l	0.0002	0.0002	1	09/25/19 12:56	10/07/19 17:20	EPA 3005A	97,6020B	AM
Chromium, Total	0.003		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 17:20	EPA 3005A	97,6020B	AM
Copper, Total	0.013		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 17:20	EPA 3005A	97,6020B	AM
Lead, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 17:20	EPA 3005A	97,6020B	AM

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-04 Date Collected: 09/23/19 10:50

Client ID: MW04A-092319 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Matrix: Groundwater

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Cadmium, Total	ND		mg/l	0.0002	0.0002	1	09/25/19 12:56	10/07/19 17:24	EPA 3005A	97,6020B	AM
Chromium, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 17:24	EPA 3005A	97,6020B	AM
Copper, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 17:24	EPA 3005A	97,6020B	AM
Lead, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 17:24	EPA 3005A	97,6020B	AM

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-05 Date Collected: 09/23/19 10:47

Client ID: MW05-092319 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Matrix: Groundwater

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Cadmium, Total	ND		mg/l	0.0002	0.0002	1	09/25/19 12:56	10/07/19 17:28	EPA 3005A	97,6020B	AM
Chromium, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 17:28	EPA 3005A	97,6020B	AM
Copper, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 17:28	EPA 3005A	97,6020B	AM
Lead, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 17:28	EPA 3005A	97,6020B	AM

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-06 Date Collected: 09/23/19 14:51

Client ID: MW06-092319 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Matrix: Groundwater

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Cadmium, Total	ND		mg/l	0.0002	0.0002	1	09/25/19 12:56	10/07/19 16:31	EPA 3005A	97,6020B	AM
Chromium, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 16:31	EPA 3005A	97,6020B	AM
Copper, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 16:31	EPA 3005A	97,6020B	AM
Lead, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 16:31	EPA 3005A	97,6020B	AM

Project Name: NBH-CDF GROUNDWATER SAMPLING
Lab Number: L1944139
Project Number: 60597627
Report Date: 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-07
Client ID: MW07A-092419
Sample Location: NEW BEDFORD, MA
Date Collected: 09/24/19 09:40
Date Received: 09/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Cadmium, Total	0.0003		mg/l	0.0002	0.0002	1	09/25/19 12:56	10/07/19 17:33	EPA 3005A	97,6020B	AM
Chromium, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 17:33	EPA 3005A	97,6020B	AM
Copper, Total	0.002		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 17:33	EPA 3005A	97,6020B	AM
Lead, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 17:33	EPA 3005A	97,6020B	AM

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-08 Date Collected: 09/23/19 16:20

Client ID: EB-001-092319 Date Received: 09/24/19

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Cadmium, Total	ND		mg/l	0.0002	0.0002	1	09/25/19 12:56	10/07/19 16:44	EPA 3005A	97,6020B	AM
Chromium, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 16:44	EPA 3005A	97,6020B	AM
Copper, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 16:44	EPA 3005A	97,6020B	AM
Lead, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 16:44	EPA 3005A	97,6020B	AM

Project Name: NBH-CDF GROUNDWATER SAMPLING **Lab Number:** L1944139

Project Number: 60597627 **Report Date:** 01/16/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-08 Batch: WG1288448-1										
Cadmium, Total	ND		mg/l	0.0002	0.0002	1	09/25/19 12:56	10/07/19 16:06	97,6020B	AM
Chromium, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 16:06	97,6020B	AM
Copper, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 16:06	97,6020B	AM
Lead, Total	ND		mg/l	0.001	0.001	1	09/25/19 12:56	10/07/19 16:06	97,6020B	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: NBH-CDF GROUNDWATER SAMPLING

Project Number: 60597627

Lab Number: L1944139

Report Date: 01/16/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01-08 Batch: WG1288448-2 WG1288448-3								
Cadmium, Total	106		112		80-120	6		20
Chromium, Total	106		103		80-120	3		20
Copper, Total	98		96		80-120	2		20
Lead, Total	111		111		80-120	0		20

Matrix Spike Analysis
Batch Quality Control

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627

Lab Number: L1944139
Report Date: 01/16/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG1288448-4 WG1288448-5 QC Sample: L1944139-06 Client ID: MW06-092319												
Cadmium, Total	ND	0.051	0.0542	106		0.0561	110		75-125	3		20
Chromium, Total	ND	0.2	0.203	102		0.199	100		75-125	2		20
Copper, Total	ND	0.25	0.246	98		0.253	101		75-125	3		20
Lead, Total	ND	0.51	0.560	110		0.578	113		75-125	3		20

INORGANICS
&
MISCELLANEOUS

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627
Lab Number: L1944139
Report Date: 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-01
Client ID: MW01-092319
Sample Location: NEW BEDFORD, MA
Sample Depth:
Matrix: Groundwater

Date Collected: 09/23/19 14:20
Date Received: 09/24/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	09/26/19 11:15	121,2540D	DR

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627
Lab Number: L1944139
Report Date: 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-02
Client ID: MW01-092319-REP
Sample Location: NEW BEDFORD, MA
Sample Depth:
Matrix: Groundwater

Date Collected: 09/23/19 14:25
Date Received: 09/24/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	09/26/19 11:15	121,2540D	DR

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627
Lab Number: L1944139
Report Date: 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-03
Client ID: MW03-092419
Sample Location: NEW BEDFORD, MA
Sample Depth:
Matrix: Groundwater

Date Collected: 09/24/19 11:30
Date Received: 09/24/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	9.7		mg/l	5.0	NA	1	-	09/26/19 11:15	121,2540D	DR

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627
Lab Number: L1944139
Report Date: 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-04
Client ID: MW04A-092319
Sample Location: NEW BEDFORD, MA
Sample Depth:
Matrix: Groundwater

Date Collected: 09/23/19 10:50
Date Received: 09/24/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	09/26/19 11:15	121,2540D	DR

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627
Lab Number: L1944139
Report Date: 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-05
Client ID: MW05-092319
Sample Location: NEW BEDFORD, MA
Sample Depth:
Matrix: Groundwater

Date Collected: 09/23/19 10:47
Date Received: 09/24/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	09/26/19 11:15	121,2540D	DR

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627
Lab Number: L1944139
Report Date: 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-06
Client ID: MW06-092319
Sample Location: NEW BEDFORD, MA
Sample Depth:
Matrix: Groundwater

Date Collected: 09/23/19 14:51
Date Received: 09/24/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	14.		mg/l	5.0	NA	1	-	09/26/19 11:15	121,2540D	DR

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627
Lab Number: L1944139
Report Date: 01/16/20

SAMPLE RESULTS

Lab ID: L1944139-07
Client ID: MW07A-092419
Sample Location: NEW BEDFORD, MA
Sample Depth:
Matrix: Groundwater

Date Collected: 09/24/19 09:40
Date Received: 09/24/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	09/26/19 11:15	121,2540D	DR

Project Name: NBH-CDF GROUNDWATER SAMPLIN
Project Number: 60597627
Lab Number: L1944139
Report Date: 01/16/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-07 Batch: WG1288843-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	09/26/19 11:15	121,2540D	DR

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627

Lab Number: L1944139
Report Date: 01/16/20

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1944139-01A	Plastic 950ml unpreserved	A	NA		3.8	Y	Absent		TSS-2540(7)
L1944139-01B1	Amber 500ml unpreserved	A	7	7	3.8	Y	Absent		A2-PCB-8082(7)
L1944139-01B2	Amber 500ml unpreserved	A	7	7	3.8	Y	Absent		A2-PCB-8082(7)
L1944139-01C	Plastic 250ml HNO3 preserved	A	<2	<2	3.8	Y	Absent		A2-CR-MCP6020T-10(180),A2-CD-MCP6020T-10(180),A2-PB-MCP6020T-10(180)
L1944139-01D1	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-01D2	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-01D3	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-02A	Plastic 950ml unpreserved	A	NA		3.8	Y	Absent		TSS-2540(7)
L1944139-02B1	Amber 500ml unpreserved	A	7	7	3.8	Y	Absent		A2-PCB-8082(7)
L1944139-02B2	Amber 500ml unpreserved	A	7	7	3.8	Y	Absent		A2-PCB-8082(7)
L1944139-02C	Plastic 250ml HNO3 preserved	A	<2	<2	3.8	Y	Absent		A2-CR-MCP6020T-10(180),A2-CD-MCP6020T-10(180),A2-PB-MCP6020T-10(180)
L1944139-02D1	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-02D2	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-02D3	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-03A	Plastic 950ml unpreserved	A	NA		3.8	Y	Absent		TSS-2540(7)
L1944139-03B1	Amber 500ml unpreserved	A	7	7	3.8	Y	Absent		A2-PCB-8082(7)
L1944139-03B2	Amber 500ml unpreserved	A	7	7	3.8	Y	Absent		A2-PCB-8082(7)
L1944139-03C	Plastic 250ml HNO3 preserved	A	<2	<2	3.8	Y	Absent		A2-CR-MCP6020T-10(180),A2-CD-MCP6020T-10(180),A2-PB-MCP6020T-10(180)
L1944139-03D1	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-03D2	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-03D3	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)

*Values in parentheses indicate holding time in days

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627

Lab Number: L1944139
Report Date: 01/16/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1944139-04A	Plastic 950ml unpreserved	A	NA		3.8	Y	Absent		TSS-2540(7)
L1944139-04B1	Amber 500ml unpreserved	A	7	7	3.8	Y	Absent		A2-PCB-8082(7)
L1944139-04B2	Amber 500ml unpreserved	A	7	7	3.8	Y	Absent		A2-PCB-8082(7)
L1944139-04C	Plastic 250ml HNO3 preserved	A	<2	<2	3.8	Y	Absent		A2-CR-MCP6020T-10(180),A2-CD-MCP6020T-10(180),A2-PB-MCP6020T-10(180)
L1944139-04D1	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-04D2	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-04D3	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-05A	Plastic 950ml unpreserved	B	NA		2.2	Y	Absent		TSS-2540(7)
L1944139-05B1	Amber 500ml unpreserved	B	7	7	2.2	Y	Absent		A2-PCB-8082(7)
L1944139-05B2	Amber 500ml unpreserved	B	7	7	2.2	Y	Absent		A2-PCB-8082(7)
L1944139-05C	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		A2-CR-MCP6020T-10(180),A2-CD-MCP6020T-10(180),A2-PB-MCP6020T-10(180)
L1944139-05D1	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-05D2	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-05D3	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-06A	Plastic 950ml unpreserved	B	NA		2.2	Y	Absent		TSS-2540(7)
L1944139-06B1	Amber 500ml unpreserved	B	7	7	2.2	Y	Absent		A2-PCB-8082(7)
L1944139-06B2	Amber 500ml unpreserved	B	7	7	2.2	Y	Absent		A2-PCB-8082(7)
L1944139-06B3	Amber 500ml unpreserved	B	7	7	2.2	Y	Absent		A2-PCB-8082(7)
L1944139-06B4	Amber 500ml unpreserved	B	7	7	2.2	Y	Absent		A2-PCB-8082(7)
L1944139-06B5	Amber 500ml unpreserved	B	7	7	2.2	Y	Absent		A2-PCB-8082(7)
L1944139-06B6	Amber 500ml unpreserved	B	7	7	2.2	Y	Absent		A2-PCB-8082(7)
L1944139-06C	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		A2-CR-MCP6020T-10(180),A2-CD-MCP6020T-10(180),A2-PB-MCP6020T-10(180)
L1944139-06C1	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		A2-CR-MCP6020T-10(180),A2-CD-MCP6020T-10(180),A2-PB-MCP6020T-10(180)
L1944139-06C2	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		A2-CR-MCP6020T-10(180),A2-CD-MCP6020T-10(180),A2-PB-MCP6020T-10(180)
L1944139-06C3	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		-
L1944139-06D1	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-06D2	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)

*Values in parentheses indicate holding time in days

Project Name: NBH-CDF GROUNDWATER SAMPLING
Project Number: 60597627

Lab Number: L1944139
Report Date: 01/16/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1944139-06D3	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-06D4	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-06D5	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-06D6	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-06D7	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-06D8	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-06D9	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-07A	Plastic 950ml unpreserved	B	NA		2.2	Y	Absent		TSS-2540(7)
L1944139-07B1	Amber 500ml unpreserved	B	7	7	2.2	Y	Absent		A2-PCB-8082(7)
L1944139-07B2	Amber 500ml unpreserved	B	7	7	2.2	Y	Absent		A2-PCB-8082(7)
L1944139-07C	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		A2-CR-MCP6020T-10(180),A2-CD-MCP6020T-10(180),A2-PB-MCP6020T-10(180)
L1944139-07D1	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-07D2	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-07D3	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-08B1	Amber 500ml unpreserved	B	7	7	2.2	Y	Absent		A2-PCB-8082(7)
L1944139-08B2	Amber 500ml unpreserved	B	7	7	2.2	Y	Absent		A2-PCB-8082(7)
L1944139-08C	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		A2-CR-MCP6020T-10(180),A2-CD-MCP6020T-10(180),A2-PB-MCP6020T-10(180)
L1944139-08D1	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-08D2	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-08D3	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-09D1	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1944139-09D2	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)

*Values in parentheses indicate holding time in days

Project Name:	NBH-CDF GROUNDWATER SAMPLING	**Lab Number:**	L1944139
Project Number:	60597627	**Report Date:**	01/16/20

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	NBH-CDF GROUNDWATER SAMPLING	**Lab Number:**	L1944139
Project Number:	60597627	**Report Date:**	01/16/20

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

Terms

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

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

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

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

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

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

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

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

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

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

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration

Report Format: DU Report with 'J' Qualifiers

Project Name:	NBH-CDF GROUNDWATER SAMPLING	**Lab Number:**	L1944139
Project Number:	60597627	**Report Date:**	01/16/20

Data Qualifiers

Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	NBH-CDF GROUNDWATER SAMPLING	**Lab Number:**	L1944139
Project Number:	60597627	**Report Date:**	01/16/20

REFERENCES

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

97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

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

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

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

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

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

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

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

Serial_No:01162014:24

9/24/19 L1944194

COC ID: 20190924-CDF GWS | TURNAROUND TIME: Standard | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Facility Name	NBH - CDF Groundwater Sampling			Lab Name	Alpha Analytical Lab			Email Invoice To	william.humphries@aecom.com
Project Number	60597627			Lab Contact	Liz Porta			Invoice Reports	
Department				Email				Email Report To	Helen.Jones@aecom.com
Address	103 Sawyer St			Address	320 Forbes Boulevard			Email Reports	
								Shipping Company	
City	New Bedford	State	MA	City	Mansfield	State	MA	Tracking Number	
Postal Code	02746	Country		Postal Code	02048	Country		Cooler Count	2
Phone Number				Phone Number	508-844-4124			Cooler Description	
Deputy Project Manager	Will Humphries			Quote Number				Sampler 2	
Email Address				PO Number				Sampler 3	

SAMPLE DETAILS / ANALYSIS REQUESTED (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

Sample ID	Start Depth	End Depth	Depth Unit	Field Matrix	Date	Time (24hr)	G=Grab C=Comp	Total # Of Cont.	FIL.	PRESERV.	ANALYSIS: PCB aroclor - MCP 8082A	Metals - MCP14	TSS - SM2540	VOC - MP8260C								
										4° C	HNO3	4° C	HCl								
MW01-092319				WG	2019/09/23	14:20	G	7			2	1	1	3								
MW01-092319-REP				WG	2019/09/23	14:25	G	7			2	1	1	3								
MW03-092419				WG	2019/09/24	11:30	G	7			2	1	1	3								
MW04A-092319				WG	2019/09/23	10:50	G	7			2	1	1	3								
MW05-092319				WG	2019/09/23	10:47	G	7			2	1	1	3								
MW06-092319				WG	2019/09/23	14:51	G	19			6	3	1	9	MS/ MSD							
MW07A-092419				WG	2019/09/24	9:40	G	7			2	1	1	3								
EB-001-092319				EB	2019/09/23	16:20	G	6			2	1		3								
TB-001-091819				TB	2019/09/18	12:00	G	2						2								

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
"H" denotes hold until further instruction MW06-092319 is MS/MSD	Patrick Fallin AECOM AAL 9/24/19 16:48	9/24/2019 1550	AAL 9/24/19 15:10 9/24/19 16:48	

NB OF BOTTLES RETURNED/DESCRIPTION

Sampler's Name	Marc Smith	Mobile #	
Sampler's Signature		Date/Time	9/24/19

Page 1 of 1

Method Blank Summary
Form 4
Volatiles

Client	: AECOM	**Lab Number**	: L1944139
Project Name	: NBH-CDF GROUNDWATER SAMPLING	**Project Number**	: 60597627
Lab Sample ID	: WG1292231-5	**Lab File ID**	: VJ191004A09
Instrument ID	: JACK		
Matrix	: WATER	**Analysis Date**	: 10/04/19 05:20

Client Sample No.	Lab Sample ID	Analysis Date
WG1292231-3LCS	WG1292231-3	10/04/19 03:42
WG1292231-4LCSD	WG1292231-4	10/04/19 04:14
TB-001-091819	L1944139-09	10/04/19 09:07
EB-001-092319	L1944139-08	10/04/19 09:40
MW06-092319	L1944139-06	10/04/19 10:12
MW01-092319	L1944139-01	10/04/19 10:45
MW01-092319-REP	L1944139-02	10/04/19 11:17
MW04A-092319	L1944139-04	10/04/19 11:50
MW05-092319	L1944139-05	10/04/19 12:22
MW07A-092419	L1944139-07	10/04/19 12:55
MW03-092419	L1944139-03	10/04/19 13:27
MW06-092319MS	WG1292231-6	10/04/19 14:00
MW06-092319MSD	WG1292231-7	10/04/19 14:33

Calibration Verification Summary
Form 7
Volatiles

Client	: AECOM	**Lab Number**	: L1944139		
Project Name	: NBH-CDF GROUNDWATER SAMPLING	**Project Number**	: 60597627		
Instrument ID	: JACK	**Calibration Date**	: 10/04/19 03:42		
Lab File ID	: VJ191004A03	**Init. Calib. Date(s)**	: 09/23/19	09/23/19	
Sample No	: WG1292231-2	**Init. Calib. Times**	: 09:24	13:11	
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	94	0
Dichlorodifluoromethane	0.454	0.406	-	10.6	20	82	0
Chloromethane	0.675	0.62	-	8.1	20	85	-.02
Vinyl chloride	10	10.114	-	-1.1	20	92	0
Bromomethane	0.241	0.278	-	-15.4	20	120	0
Chloroethane	10	9.336	-	6.6	20	86	0
Trichlorofluoromethane	0.612	0.595	-	2.8	20	89	0
Ethyl ether	0.185	0.179	-	3.2	20	91	0
1,1-Dichloroethene	0.348	0.343	-	1.4	20	88	0
Carbon disulfide	1.02	0.983	-	3.6	20	89	0
Freon-113	0.37	0.378	-	-2.2	20	93	0
Acrolein	0.067	0.072	-	-7.5	20	98	0
Methylene chloride	0.412	0.414	-	-0.5	20	97	0
Acetone	10	11.158	-	-11.6	20	96	0
trans-1,2-Dichloroethene	0.384	0.395	-	-2.9	20	96	0
Methyl acetate	0.274	0.292	-	-6.6	20	100	0
Methyl tert-butyl ether	0.928	0.883	-	4.8	20	90	0
tert-Butyl alcohol	0.024	0.021*	-	12.5	20	89	0
Diisopropyl ether	1.768	1.844	-	-4.3	20	99	0
1,1-Dichloroethane	0.854	0.879	-	-2.9	20	98	0
Halothane	0.324	0.337	-	-4	20	97	0
Acrylonitrile	0.114	0.127	-	-11.4	20	103	0
Ethyl tert-butyl ether	1.367	1.312	-	4	20	92	0
Vinyl acetate	0.977	0.998	-	-2.1	20	99	0
cis-1,2-Dichloroethene	0.475	0.494	-	-4	20	97	0
2,2-Dichloropropane	0.634	0.547	-	13.7	20	83	0
Bromochloromethane	0.196	0.211	-	-7.7	20	100	0
Cyclohexane	0.967	1.018	-	-5.3	20	100	0
Chloroform	0.772	0.746	-	3.4	20	95	0
Ethyl acetate	0.355	0.387	-	-9	20	100	0
Carbon tetrachloride	10	9.18	-	8.2	20	99	0
Tetrahydrofuran	0.128	0.143	-	-11.7	20	98	0
Dibromofluoromethane	0.227	0.231	-	-1.8	20	95	0
1,1,1-Trichloroethane	0.674	0.657	-	2.5	20	92	0
2-Butanone	0.157	0.174	-	-10.8	20	105	0
1,1-Dichloropropene	0.671	0.635	-	5.4	20	92	0
Benzene	1.767	1.819	-	-2.9	20	97	0
tert-Amyl methyl ether	1.041	0.955	-	8.3	20	88	0
1,2-Dichloroethane-d4	0.282	0.257	-	8.9	20	86	0
1,2-Dichloroethane	0.555	0.533	-	4	20	91	0
Methyl cyclohexane	0.837	0.819	-	2.2	20	95	0
Trichloroethene	0.443	0.469	-	-5.9	20	98	0
Dibromomethane	0.215	0.218	-	-1.4	20	95	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: AECOM	**Lab Number**	: L1944139		
Project Name	: NBH-CDF GROUNDWATER SAMPLING	**Project Number**	: 60597627		
Instrument ID	: JACK	**Calibration Date**	: 10/04/19 03:42		
Lab File ID	: VJ191004A03	**Init. Calib. Date(s)**	: 09/23/19	09/23/19	
Sample No	: WG1292231-2	**Init. Calib. Times**	: 09:24	13:11	
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichloropropane	0.47	0.485	-	-3.2	20	98	0
Bromodichloromethane	0.533	0.522	-	2.1	20	92	0
1,4-Dioxane	0.00261	0.00272*	-	-4.2	20	115	0
cis-1,3-Dichloropropene	0.645	0.635	-	1.6	20	92	0
Chlorobenzene-d5	1	1	-	0	20	98	0
Toluene-d8	1.254	1.198	-	4.5	20	94	0
Toluene	1.447	1.402	-	3.1	20	95	0
4-Methyl-2-pentanone	0.149	0.144	-	3.4	20	95	0
Tetrachloroethene	0.596	0.594	-	0.3	20	99	0
trans-1,3-Dichloropropene	0.657	0.586	-	10.8	20	86	0
Ethyl methacrylate	0.483	0.467	-	3.3	20	98	0
1,1,2-Trichloroethane	0.332	0.327	-	1.5	20	97	0
Chlorodibromomethane	0.416	0.417	-	-0.2	20	103	0
1,3-Dichloropropane	0.707	0.688	-	2.7	20	97	0
1,2-Dibromoethane	0.398	0.386	-	3	20	97	0
2-Hexanone	0.295	0.289	-	2	20	97	0
Chlorobenzene	1.562	1.496	-	4.2	20	96	0
Ethylbenzene	2.83	2.729	-	3.6	20	96	0
1,1,1,2-Tetrachloroethane	0.471	0.463	-	1.7	20	101	0
p/m Xylene	1.084	1.072	-	1.1	20	95	0
o Xylene	1.013	1.001	-	1.2	20	96	0
Styrene	1.634	1.634	-	0	20	95	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	101	0
Bromoform	0.453	0.444	-	2	20	103	0
Isopropylbenzene	5.893	5.486	-	6.9	20	96	0
4-Bromofluorobenzene	0.983	0.932	-	5.2	20	96	0
Bromobenzene	1.208	1.147	-	5	20	97	0
n-Propylbenzene	6.452	6.014	-	6.8	20	95	0
1,4-Dichlorobutane	1.629	1.534	-	5.8	20	94	0
1,1,2,2-Tetrachloroethane	0.87	0.831	-	4.5	20	95	0
4-Ethyltoluene	5.036	4.761	-	5.5	20	97	0
2-Chlorotoluene	4.235	3.913	-	7.6	20	95	0
1,3,5-Trimethylbenzene	4.325	4.094	-	5.3	20	96	0
1,2,3-Trichloropropane	0.721	0.679	-	5.8	20	93	0
trans-1,4-Dichloro-2-buten	0.298	0.26	-	12.8	20	92	0
4-Chlorotoluene	3.829	3.498	-	8.6	20	95	0
tert-Butylbenzene	3.849	3.553	-	7.7	20	95	0
1,2,4-Trimethylbenzene	4.086	3.832	-	6.2	20	96	0
sec-Butylbenzene	5.216	4.797	-	8	20	96	0
p-Isopropyltoluene	4.485	4.165	-	7.1	20	97	0
1,3-Dichlorobenzene	2.289	2.2	-	3.9	20	98	0
1,4-Dichlorobenzene	2.253	2.146	-	4.7	20	99	0
p-Diethylbenzene	2.435	2.236	-	8.2	20	97	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: AECOM	**Lab Number**	: L1944139	
Project Name	: NBH-CDF GROUNDWATER SAMPLING	**Project Number**	: 60597627	
Instrument ID	: JACK	**Calibration Date**	: 10/04/19 03:42	
Lab File ID	: VJ191004A03	**Init. Calib. Date(s)**	: 09/23/19	09/23/19
Sample No	: WG1292231-2	**Init. Calib. Times**	: 09:24	13:11
Channel	:			

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
n-Butylbenzene	3.541	3.181	-	10.2	20	95	0
1,2-Dichlorobenzene	2.063	1.98	-	4	20	98	0
1,2,4,5-Tetramethylbenzene	3.216	3.116	-	3.1	20	97	0
1,2-Dibromo-3-chloropropan	0.129	0.119	-	7.8	20	97	0
1,3,5-Trichlorobenzene	1.171	1.111	-	5.1	20	99	0
Hexachlorobutadiene	0.421	0.389	-	7.6	20	100	0
1,2,4-Trichlorobenzene	0.98	0.927	-	5.4	20	96	0
Naphthalene	2.191	2.247	-	-2.6	20	100	0
1,2,3-Trichlorobenzene	0.855	0.822	-	3.9	20	99	0

* Value outside of QC limits.

Attachment C

Validation Report

AECOM
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Chelmsford, MA 01824

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Memorandum

To	William Humphries
CC	Maura Surprenant
Subject	New Bedford Harbor Superfund Site Data Validation, New Bedford, MA
Lab SDG Number/Lab	L1944139
Laboratory	Alpha Analytical, Mansfield, MA
From	Kristin Rutherford/AECOM Reviewer: Edith Hutchinson/AECOM
Date	11/13/2019

Enclosed is the final validation report for the sample delivery group (SDG) listed below.

SDG #	Fraction	Date Sampled
L1944139	PCB Aroclors by GC/ECD SW8082A VOC by GC/MS SW8260C Metals by ICP/MS SW6020B Mercury by CVAA SW7470A TSS SM2540D	 09/18/2019 09/23/2019 09/24/2019

The data validation was performed at Tier I Stage 2A level using the following guidelines, as applicable to each method:

- EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013
- EPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review, January 2017
- EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017

Data Validation Report

Project Name	New Bedford Harbor
Task Order Number	W912WJ17F0021
Collection Date	09/18/2019, 09/23/2019, 09/24/2019
Matrix	Aqueous

Parameter(s)	PCB Aroclors by GC/ECD SW8082A VOC by GC/MS SW8260C Metals by ICP/MS SW6020B Mercury by CVAA SW7470A TSS SM2540D
Validation Level	USEPA Region I Tier I Stage 2A Data Validation
Laboratory	Alpha Analytical, Mansfield, MA
Validator	Kristin Rutherford
Report Date	11/13/2019
Sample Delivery Group (SDG)	L1944139

Sample Identification			
Sample ID	**Lab ID**	**Matrix/Sample Type**	**Parameters**
MW01-092319	L1944139-01	Groundwater	PCB Aroclors, VOC, Metals, Mercury, TSS
MW01-092319-REP	L1944139-02	Field replicate of MW01-092319	PCB Aroclors, VOC, Metals, Mercury, TSS
MW03-092419	L1944139-03	Groundwater	PCB Aroclors, VOC, Metals, Mercury, TSS
MW04A-092319	L1944139-04	Groundwater	PCB Aroclors, VOC, Metals, Mercury, TSS
MW05-092319	L1944139-05	Groundwater	PCB Aroclors, VOC, Metals, Mercury, TSS
MW06-092319	L1944139-06	Groundwater	PCB Aroclors, VOC, Metals, Mercury, TSS
MW07A-092419	L1944139-07	Groundwater	PCB Aroclors, VOC, Metals, Mercury, TSS
EB-001-092319	L1944139-08	Equipment Blank	PCB Aroclors, VOC, Metals, Mercury
TB-001-091819	L1944139-09	Trip Blank	VOC

Introduction

- This data review covers the SDG and parameters listed above. The data validation was performed using EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures (April 2013), EPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review, January 2017, EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 and criteria listed in the task order QAPP. The data qualification summary details any data validation qualifiers that were assigned during the validation process.

The following data validation qualifiers are defined for the purpose of this report:

U	Indicates the compound or analyte was analyzed for but not detected at or above the stated limit
J	Indicates an estimated value
J+	Indicates an estimated value that may be biased high
J-	Indicates an estimated value that may be biased low
UJ	Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value
R	Quality control data indicates the data are not usable
EB	An analyte that was identified in an aqueous equipment blank (EB) that was used to assess field contamination associated with soil/sediment samples.

Data Qualification Summary

Selected data points were estimated due to nonconformances of certain QC criteria. Qualified sample results are presented below.

Sample ID(s)	Lab ID	Compound(s)	Flag	Reason
MW06-092319	L1944139-06	trans-1,3-Dichloropropene	UJ	MS recovery, biased low
MW06-092319	L1944139-06	Bromomethane	UJ	MS recovery, biased low
MW06-092319	L1944139-06	2,2-Dichloropropane	UJ	MS recovery, biased low
MW06-092319	L1944139-06	1,2-Dibromo-3-chloropropane	UJ	MS recovery, biased low
MW06-092319	L1944139-06	1,4-Dioxane	UJ	MS recovery, biased low

PCB Aroclor Data Validation Checklist

Matrix:	Aqueous	**Analysis:**	PCB Aroclor
Reviewed by:	Kristin Rutherford	**Date:**	11/13/2019

QC Parameter	Present Y/N	Acceptance Criteria	Data Usable?	Comments
TIER I Stage 1				
Data Package Complete	Y	Completeness checklist elements included	Y	
Sample Receipt Conditions; Holding Time	Y	Ice, 4°C ± 2°C 14 days (1 year if cold or frozen per QAPP) to extraction; 40 days to analysis	Y	Cooler temps 3.8^0C and 2.2^0C.
TIER I Stage 2A (plus Tier I Stage 1)				
Method Blank	Y	<Reporting limit Aqueous: Lab RL 0.025ug/L PQL 0.050 ug/L	Y	MB for batch WG1288878-1 ND
Laboratory Control Sample/Laboratory Control Sample Duplicate	Y	Aroclor-1016 (60-122%) Aroclor-1260 (53-122%) (QAPP)	Y	WG1288878-2/3: QC criteria met
Surrogate Recovery	Y	TCX 62-111 % DCB 44-135 % Recovery (lab limits)	Y	QC criteria met
Standard Reference Material SRM NIST 1944	NA	40-140% Recovery (QAPP)	NA	NA for GWs in QAPP
Internal Standards	NA	Per sample, -50% to +100% of area counts of initial calibration Level 3 standard	NA	NA for Aroclors

QC Parameter	Present Y/N	Acceptance Criteria	Data Usable?	Comments
TIER 1+ (plus Tier 1 Stage 2A)[1][2]				
Field/Equipment Blank (EB)	Y	<Reporting limit (PQL 0.50 ug/l)	Y	EB-001-092319 ND
Field Duplicate (FD)	Y	Relative Percent Difference ≤50% for soil/sed, ≤30% for aqueous, ≤50% soil/sed (QAPP)	Y	FD pair MW01-092319 (L1944139-01) and MW01-092319 -REP (L1944139-02): results in both ND. No action.
Percent Solids		Percent solids is <50%		
Sulfur Cleanup		Sulfur clean-up performed; sulfur co-elution does not interfere with peak integration.		
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	Y	Aroclor-1016 (40-140%) Aroclor-1260 (40-140%) (lab limits) RPD ≤30% (QAPP)	Y	MS/MSD: performed on sample MW06-092319 (L944139-06). QC criteria met.
TIER II (plus Tier 1 Stage 2A)				
Initial Calibration Standard (ICAL)		Coefficient of Determination >0.995 based on linear curve fit		
Independent Calibration Check (ICC)		≤25% %D		
Continuing Calibration Standard (CCV)		≤25% %D		
Recalculation checks (5%)				

[1] Shaded validation tiers are not applicable for this project.
[2] The DO#10 QAPP specifies validation of EB, FD, TB, MS/MSD, and IB results be validated as part of Tier I Stage 2A validation.

VOC Data Validation Checklist

Matrix:	Aqueous	**Analysis:**	VOC
Reviewed by:	Kristin Rutherford	**Date:**	11/13/2019

QC Parameter	Present Y/N	Acceptance Criteria	Data Usable?	Comments
TIER I Stage 1				
Data Package Complete	Y	Completeness checklist elements included	Y	
Sample Receipt Conditions; Holding Time	Y	≤6°C not preserved 7 days; ≤6°C preserved 14 days (NFG)	Y	Cooler temps: 3.8^{0}C and 2.2^{0}C.
TIER I Stage 2A (plus Tier I Stage 1)				
Method Blank	Y	Acetone, 2-Butanone, & Methylene Chloride ≤ 2 x RL; all other Target Analytes < RL	Y	MB WG1292231-5 ND
Laboratory Control Sample/Laboratory Control Sample Duplicate	Y	% Recovery within Lab limits; RPD ≤20% (QAPP)	Y	LCS WG1292231-3/4: criteria met
Surrogate Recovery	Y	% Recovery within Lab limits (QAPP)	Y	QC criteria met
Internal Standards	Y	Per sample, -50% to +100% of area counts of initial calibration Level 3 standard	Y	QC criteria met
TIER 1+ (plus Tier 1 Stage 2A)[3][4]				
Field/Equipment Blank (EB)	Y	Target Analytes <RL (QAPP)	Y	EB-001-092319 (L1944139-08) ND
Trip Blank (TB)	Y	Target Analytes <RL (QAPP)	Y	TB-001-091819 (L1944139-09) ND
Field Duplicate (FD)	Y	Relative Percent Difference ≤30% for aqueous (QAPP)	Y	FD pair MW01-092319 (L1944139-01) and MW01-092319 -REP (L1944139-02): results in both ND. No action.
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	Y	% Recovery within Lab limits; RPD ≤20% (QAPP)	Y	**MS/MSD: performed on sample MW06-092319 (L1944139-06) five compounds outside QC %R limits, 1,4-dioxane outside RPD limits. See nonconformance table below. ND results in parent sample (per Reg 1 2013) qualified (UJ) for %R since bias low. No qual for RPD since 1,4-dioxane result in parent sample ND.**

[3] Shaded validation tiers are not applicable for this project.
[4] The DO#10 QAPP specifies validation of EB, FD, TB, MS/MSD, and IB results be validated as part of Tier I Stage 2A validation.

QC Parameter	Present Y/N	Acceptance Criteria	Data Usable?	Comments
TIER II (plus Tier 1 Stage 2A)				
BFB Tune		Samples analyzed within 12 hours of the BFB tune and all tune criteria were met.		
Initial Calibration Standard (ICAL)		Minimum RRF, (varies) %RSD (varies) (NFG)		
Initial Calibration Verification (ICV)		Varies, (20-40%D) (NFG)		
Continuing Calibration Standard (CCV)		≤20% %D		
Recalculation checks (5%)				

Matrix Spike/Matrix Spike Duplicates

Sample ID	Compound	MS % Recovery	MSD % Recovery	Lower Limit	Upper Limit	RPD	RPD Limit
MW06-092319	trans-1,3-Dichloropropene	**67**	72	70	130	7	20
	Bromomethane	**48**	**56**	70	130	15	20
	2,2-Dichloropropane	**57**	**64**	70	130	12	20
	1,2-Dibromo-3-chloropropane	**69**	73	70	130	6	20
	1,4-Dioxane	88	**56**	70	130	**44**	20

Metals Data Validation Checklist

Matrix:	Aqueous	**Analysis:**	Metals, Mercury
Reviewed by:	Kristin Rutherford	**Date:**	11/13/2019

QC Parameter	Present Y/N	Acceptance Criteria	Data Usable?	Comments
TIER I Stage 1				
Data Package Complete	Y	Completeness checklist elements included	Y	
Sample Receipt Conditions; Holding Time	Y	180 days, preserved to pH≤2 (with nitric acid) (NFG)	Y	Cooler temps: 3.8^{0}C and 2.2^{0}C.
TIER I Stage 2A (plus Tier I Stage 1)				
Method Blank	Y	Target Analytes<Reporting limit	Y	MB WG1288448-1: ND MB WG1288450-1: ND
Laboratory Control Sample/Laboratory Control Sample Duplicate	Y	80-120% Recovery (QAPP)	Y	WG1288448-2/3: QC criteria met
Interference Check sample A and B (ICSA & ICSAB)	Y	80-120% R (QAPP)	Y	QC criteria met Interferents in ICSA and ICSAB not reported on Form4a (non-target analytes), %R could not be assessed. ICSA results for non-spiked analytes <MDL; no actions.
ICP Serial Dilution	Y	± 10% agreement between 1:5 dilution and undiluted sample for results > 50x MDL (QAPP)	Y	Serial Dilution on sample MW06-092319 (L1944139-06): QC criteria met
Post Digestion Spike (PDS)	NA	80-120% R (QAPP)	NA	Not analyzed since MS %Rs within criteria
Internal Standards	Y	70-120% R (QAPP)	Y	QC criteria met
TIER 1+ (plus Tier 1 Stage 2A)[5][6]				
Field/Equipment Blank (EB)	Y	Target Analytes<Reporting limit	Y	Equipment Blank EB-001-092319 (L1944139-08) ND
Field Duplicate (FD)	Y	Relative Percent Difference ≤30% for aqueous, (QAPP)	Y	FD pair MW01-092319 (L1944139-01) and MW01-092319 -REP (L1944139-02) Precision criteria met, see FD calc file.

[5] Shaded validation tiers are not applicable for this project.
[6] The DO#10 QAPP specifies validation of EB, FD, TB, MS/MSD, and IB results be validated as part of Tier I Stage 2A validation.

QC Parameter	Present Y/N	Acceptance Criteria	Data Usable?	Comments
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	Y	75-125% Recovery (for compounds spiked at a concentration >5x background); RPD ≤20% (QAPP)	Y	MS/MSD on sample MW06-092319 (L1944139-06): %R within criteria for all analytes. RPD >20% for Sb, Zn. No actions since parent sample results for Sb, Zn ND.
Laboratory Duplicate	NA	RPD ≤20% for results ≥5X RL (based on QAPP MS/MSD precision)	NA	See MS/MSD for precision
TIER II (plus Tier 1 Stage 2A)				
ICP/MS Instrument tuning	NA	ICP instrument tuned prior to calibration. Analyzed or scanned minimum 5x consecutively, Resolution of mass calibration within 0.1 u, %RSD >5%		
Instrument calibration (ICAL)	NA	Blank + 5 stds, r≥ 0.995		
Initial Calibration Verification (ICV)	NA	90-110% (NFG)		
Continuing Calibration Standard (CCV)	NA	90-110% (NFG)		
Initial Calibration Blank (ICB)/ Continuing Calibration Blank (CCB)	NA	Target Analytes<Reporting limit		
Recalculation checks (5%)	NA			

Total Suspended Solids-Data Validation Checklist

Matrix:	Aqueous	**Analysis:**	TSS
Reviewed by:	Kristin Rutherford	**Date:**	11/13/2019

QC Parameter	Present Y/N	Acceptance Criteria	Data Usable?	Comments
TIER I Stage 1				
Data Package Complete	Y	Completeness checklist elements included	Y	Note to end data user: LCS not reported as required in QAPP. No other QC samples to assess accuracy.
Sample Receipt Conditions; Holding Time	Y	7 days from date of sampling days to analysis (QAPP Appendix C)	Y	Cooler temps:3.8°C and 2.2°C
TIER I Stage 2A (plus Tier I Stage 1)				
Method Blank	Y	Target Analytes<Reporting limit (QAPP)	Y	MB: WG1288843-1 ND
Laboratory Control Sample/Laboratory Control Sample Duplicate	NA	80-120% Recovery (QAPP)	NA	None with this SDG
TIER 1+ (plus Tier 1 Stage 2A)[7][8]				
Field/Equipment Blank (EB)	NA	Not required (QAPP)	NA	
Field Duplicate (FD)	Y	Relative Percent Difference, ≤30% (QAPP)	Y	FD pair MW01-092319 (L1944139-01) and MW01-092319 -REP (L1944139-02) both ND, no actions
Laboratory Duplicates	NA	RPD ≤5% (QAPP)	NA	None on site sample

[7] Shaded validation tiers are not applicable for this project.
[8] The DO#10 QAPP specifies validation of EB, FD, TB, MS/MSD, and IB results be validated as part of Tier I Stage 2A validation.

Additional Comments:

The data package includes	7 Field samples	1 Field blanks and	0 Media blanks

Data Completeness

QAPP Worksheet #34: Laboratory Data Completeness

Y/N	Completeness Criteria
Y	Title sheet identifying laboratory name, location, contact information
Y	Authorization statement and dated signature
Y	Analytical case narrative (i.e., data quality report)
Y	Sample identification table
Y	Method summary
Y	Sample results including date and time of analysis, (metric units, dry weight basis for sediment)
Y	QC results and acceptance criteria
Y	Signed COC forms