Clear Form

Report Cover
Waste Management Division

Supplemental Site Investigation (SSI) Data Transmittal

North Country Environmental Services, Inc. Landfill

581 Trudeau Road

Bethlehem, New Hampshire 03574

NHDES Site #: 198704033

Project Type: Water Quality Monitoring

Project #: 1737

PREPARED FOR

North Country Environmental Services, Inc. (NCES)

581 Trudeau Road, P.O. Box 9

Bethlehem, New Hampshire 03574-0009

(603) 869-3366

Mr. Joe Gay

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Sanborn, Head & Associates, Inc.

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STATE OF NEW HAMPSHIRE
TIMOTHY MICHAEL WHITE
No. 751
LICENSED PROFESSIONAL GEOLOGIST

Date of Report: September 6, 2024

Tina.A.Clark@des.nh.gov or phone (603) 271-7379
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Groundwater Monitoring Report Cover Sheet
Waste Management Bureau

Clear Form

Site Name: North Country Environmental Services, Inc. Landfill

NHDES Site ID#: 198704033 **Project number:** 1737

Municipality: Bethlehem, New Hampshire

Type of Permit and Submittal (*Check all that apply*)

Permit Type

- [X] Non-Permit Monitoring Data Submittal
- [ ] Groundwater Management Permit (GMP)
- [ ] Groundwater Release Detection Permit (GRDP)
- [ ] Groundwater Discharge Permit (GDP)

Submittal Type

- [ ] Annual/Periodic Summary Report (Year) ____
- [X] Data Transmittal* (Mo./Year) 07/2024

*for GMP Data Transmittals month/year per Condition #7 and/or any other Conditions that require reporting per Permit

Check each box where the answer to any of the following questions is "YES."

Sampling Results

- [X] During the most recent monitoring event, were any ***new*** compounds detected at any sampling point?
  Well/Compound: First sampling event - refer to Tables 2 and 3 for detected compounds
- [ ] During the most recent monitoring event, did any compounds exceed the Ambient Groundwater Quality Standards (AGQS) included in Env-Or 606.03, Table 600-1 ***for the first time*** at any sampling point?
  Well/Compound:
- [ ] Are there any detections of contamination in drinking water that is untreated prior to use?
  Well/Compound:
  - [ ] Do compounds detected exceed AGQS?
- [ ] Was free product detected for the ***first time*** in any monitoring point?
  - [ ] Surface Water (*visible sheen*)
  - [ ] Groundwater (*1/8" or greater thickness*)
    Location/Thickness:

Contaminant Trends

- [ ] Do sampling results show an increasing concentration trend in any source area monitoring well?
  Well/Compound: First sampling event
- [ ] Do sampling results indicate an AGQS violation in any of the Groundwater Management Zone (GMZ) boundary wells?
  Well/Compound:

Recommendations

(For Petroleum Fund eligible sites, contact NHDES directly, and on discovery, to recommend well/road box repairs.)

- [ ] Does the submittal include any recommendations requiring NHDES action? (*Do not check this box if the only recommendation is to continue monitoring under the conditions set forth in the existing Permit*).

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SANBORN HEAD

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Mr. James W. O'Rourke, P.G.
New Hampshire Department of Environmental Services
Waste Management Division
29 Hazen Drive, P.O. Box 95
Concord, New Hampshire 03302-0095

September 6, 2024
File No. 1003.25

Re: Supplemental Site Investigation (SSI) Data Update Transmittal
Groundwater Management and Release Detection Permit GWP-198704033-B-007
North Country Environmental Services, Inc. (NCES) Landfill
Bethlehem, New Hampshire

Dear Mr. O'Rourke:

On behalf of NCES, Sanborn, Head & Associates, Inc. (Sanborn Head) has prepared this transmittal summarizing field activities and groundwater monitoring results compiled to date related to the SSI. The SSI activities were performed in accordance with NHDES' November 7, 2023[1] and April 18, 2024[2] letters (NHDES' letters) and the Work Plan for an SSI dated February 6, 2024, prepared by Sanborn Head on behalf of NCES (Work Plan)[3]. This letter transmits a summary of the following SSI activities performed during the second and third quarters of 2024:

- Installation of monitoring wells and B-932U, B-932L and piezometers PZ-A and PZ-B in June-July 2024,
- Groundwater sampling of SSI monitoring wells on July 22, 2024, and
- Collection of water levels using pressure transducers (approximately one-month of data).

This letter is intended to serve as an interim transmittal of SSI activities completed to date; as requested by NHDES, additional planned SSI activities consistent with NHDES' letters will be documented in the Northeast Conceptual Site Model (CSM) Update Report. In addition, sampling results for B-932U and B-932L were also transmitted to NHDES by Sanborn Head on behalf of NCES as part of the 2024 Summary of Water Quality Monitoring Results and Submittal of July 2024 Monitoring Results transmittal (Annual Report), which was performed consistent with the Groundwater Management and Release Detection Monitoring Permit (GWP-198704033-B-008; the "Permit").

SUMMARY OF FIELD ACTIVITIES

This section summarizes field activities performed in relation to the SSI between May and August 2024.

[1] https://www4.des.state.nh.us/DocViewer/?ContentId=5130124
[2] https://www4.des.state.nh.us/DocViewer/?ContentId=5181229
[3] https://www4.des.state.nh.us/DocViewer/?ContentId=5153821

Drilling and Development Activities

Sanborn Head conducted a site visit on May 23, 2024 to mark out proposed drilling locations, and subsequently notified Digsafe® for utility clearance purposes on June 14, 2024. A subsurface utility survey was performed by Ground Penetrating Radar Systems, Inc. (GPRS) of Nashua, New Hampshire on June 14, 2024 at the proposed boring locations near site infrastructure.

Monitoring wells B-932U, and B-932L, and piezometers PZ-A and PZ-B were installed by Northern Drill Service, Inc. of Northborough, MA, a NH-licensed water well contractor, using a Mobile Drill B-48 Track Rig between June 24 and July 10, 2024. Refer to Figure 1 for a site plan depicting the installed monitoring well locations. Boring logs and a well development field summary form are included in Attachment 1. The monitoring wells and piezometers were advanced at the locations proposed in the Work Plan, except for B-932U and B-932L, which were offset and installed approximately 50 feet west of the proposed locations due to damaged casing causing the first boring attempt to be abandoned. In addition, installation of the proposed MW-802L location was attempted in June 2024; however, the roller bit was damaged at 11 feet below ground surface (ft bgs), and the hole was backfilled with native soils.

At each location, the driller advanced a soil boring using drive and wash drilling methods. Soil samples were collected using a 2-foot long, 2-inch outer diameter ("O.D.") split spoon sampler and logged by a Sanborn Head field representative. Potable water for drilling was obtained from the hydrant on site. Excess drill cuttings were disposed of in the landfill by facility representatives (PZ-A and PZ-B) and on the ground in the vicinity of the well (B-932U/L). Upon reaching final depth, the drillers installed a 2-inch diameter overburden monitoring well with a 10-ft screen (B-932L) or 15-ft screen (PZ-A, PZ-B, B-932U). The screens for B-932U, PZ-A, and PZ-B were set to span the water table, and the screen for B-932L was set to have approximately 25 ft screen separation from B-932U (refer to Exhibit 1).

Well construction details are provided in the logs in Attachment 1. Well materials consisted of clean, previously unused 10-foot long sections of 2-inch diameter polyvinyl chloride ("PVC") 0.006-inch slotted ("6-slot") well screen attached to solid-walled schedule 40 PVC riser pipe without the use of cement or glue. Screens were set in manufactured #1 filter sand and the annular space was backfilled with bentonite and/or cement-bentonite grout. The monitoring wells / piezometers were secured with an expansion cap and completed at the ground surface with 4-inch diameter above-grade locking steel guard pipes, except PZ-A, which was finished with a 6-inch diameter flushmounted road box.

Exhibit 1 – Monitoring Well & Piezometer Screen Intervals

Existing Well ID	Approx. Ground Elevation	Screened Interval	Screen Top	Screen Bottom
	(ft AMSL)	(ft bgs)	(ft AMSL)	(ft AMSL)
B-932U	1292	6.9 to 21.9	1285.1	1270.1
B-932L	1292	47.9 to 57.9	1244.1	1234.1
PZ-A	1331	29.1 to 44.1	1301.9	1286.9
PZ-B	1343	38.7 to 53.7	1304.3	1289.3

Following installation, the elevations of ground, top of PVC riser, and top of casing were surveyed by Horizons Engineering, Inc. of Littleton, NH. The monitoring wells and piezometers were developed by purging at least five well volumes, except for PZ-A, which was purged near dry and allowed to recharge. Refer to Attachment 1 for a summary of monitoring well development.

Water Level Gauging

On July 24, 2024, during the Triannual Sampling event, pressure transducers (non-vented Solinst Levelogger 5-series) were deployed in the following monitoring wells and piezometers: PZ-A, PZ-B, B-919U, B-304UR, B-304DR, and MW-604. In addition, a transducer was deployed in a stilling column attached to a staff gauge in the forebay of Stormwater Pond 4 (SG-Pond 4). A barometric pressure logger (barologger) was deployed in the standpipe of PZ-B. Transducers were set to a 15-minute recording frequency. The transducers were downloaded on August 22, 2024, except for SG-Pond 4, which was not accessed at that time due to water levels in Pond 4.

Summary of Sampling

Sanborn Head collected groundwater samples from two monitoring wells: B-932U and B-932L. Field parameters pH, specific conductance, temperature, and turbidity were measured at the time of sample collection. Groundwater samples were placed into laboratory containers and transported to Eurofins Environment Testing Eastern Analytical, Inc. of Concord, New Hampshire (EAI) in coolers with ice under standard chain-of-custody procedures. Samples were submitted for analysis of the following parameters:

- **Field parameters** (depth to water, specific conductance, pH, temperature, and turbidity);
- **Volatile organic compounds** (Method 8260 list[4] and low-level 1,4-dioxane);
- **Wet chemistry parameters** (bromide, chloride, nitrate, total kjeldahl nitrogen [TKN], chemical oxygen demand [COD], and sulfate);
- **Dissolved metals** (iron, manganese, arsenic, barium, cadmium, chromium, lead, antimony, beryllium, nickel, silver, and thallium); and
- **Per- and poly-perfluoroalkyl substances** (PFAS): Department of Defense [DoD] 25 analyte list.

[4] The 8260 list included standard VOC parameters typically reported at the site, except low-level ethylene dibromide (EDB) and dibromochloropropane (DBCP), which were not analyzed.

The monitoring wells were purged prior to sampling using a dedicated polyethylene bailer (B-932U) or inertial pump (B-932L) to remove approximately three times the standing volume of water from the wells. The field sampling summary form is included in Attachment 1. Refer to Tables 2 and 3 for a summary of groundwater analytical and PFAS results, respectively. The analytical laboratory reports are included as Attachment 3.

PRELIMINARY SSI WATER LEVEL GAUGING AND SAMPLING RESULTS

The following summarizes the water level and analytical results of the groundwater sampling from the SSI activities performed in May through August 2024.

Water Level Observations

This section summarizes water level data collected as part of the SSI between July and August 2024. Refer to Table 1 for manual water level gauging results. Time-series plots of pressure transducer data are included in Attachment 2. A water level contour plan is included as Figure 2, which incorporates gauging performed as part of the July 2024 triannual event under the Permit and SSI activities.

Based on the overburden water level contours included in Figure 2, groundwater flow direction is to the north, with a northwestern component indicated in the western portion of the GMZ, and a northeastern component in the eastern portion of the GMZ. Based on observations in July 2024, water levels measured at PZ-A and PZ-B were consistent with the overall direction of horizontal hydraulic gradients from other site monitoring wells. Water levels measured at B-932U in July 2024 were consistent with inferred horizontal overburden groundwater flow to the north/northwest and upward vertical gradients inferred to be the result of the lower topographic position of this couplet relative to wells located closer to the landfill. Observations and interpretations regarding seasonality and flow directions based on transducer data will be included in the CSM Report following additional periods of data collection.

Analytical Results

The following summarizes field parameter and analytical results from the July 2024 samples collected from B-932U and B-932L. For consistency with the ongoing site monitoring under the Permit, results were compared to the GW-1/AGQS[5], or the USEPA SMCL[6] if no GW-1/AGQS is available, and the July 2024 background groundwater quality concentrations (refer to the Annual Report for additional information on background groundwater quality).

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[5] "GW-1" refers to the New Hampshire GW-1 Groundwater Standards as defined in New Hampshire Department of Environmental Services (NHDES) Contaminated Sites Risk Characterization and Management Policy (RCMP) (January 1998, with 2000 through 2018 revisions/addenda). GW-1 Groundwater Standards are intended to be equivalent to the Ambient Groundwater Quality Standards (AGQSs) promulgated in Env-Or 600 (June 2015 with October 2016, September 2018, September 2019, May 2020, January 2021, and July 2021 amendments).

[6] "SMCL" refers to the USEPA Secondary Maximum Contaminant Levels as presented in the National Primary Drinking Water Standards (May 2009). The SMCLs are established as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor. These analytes are not considered to present a risk to human health at the SMCL.

GW-1/AGQS Exceedances

No exceedances of GW-1/AGQS, or the USEPA SMCL if no GW-1/AGQS is available, were recorded at B-932U or B-932L in July 2024.

Background Concentration Exceedances

Exhibit 2 summarizes analytes detected at concentrations exceeding the July 2024 background groundwater quality concentrations.

Exhibit 2 – Summary of Background Concentration Exceedances

Analyte	Location	Concentration / Value	July 2024 Site Background (refer to Table 1)	GW-1 (AGQS)	SMCL
Temperature	B-932U	12.2 °C	5.6-11.9 °C	NS	NS
	B-932L	12.3 °C			
Specific Conductance	B-932L	157 µS/cm	125 µS/cm	NS	NS
Chloride	B-932U	6 mg/L	1.8 mg/L	NS	250 mg/L
	B-932L	3.5 mg/L			
Dissolved Manganese	B-932U	0.081 mg/L	0.072 mg/L	0.3 mg/L	0.05 mg/L
Dissolved Arsenic	B-932L	0.0015 mg/L	0.00051 mg/L	0.005 mg/L	NS
PFHpA [6]	B-932U	2.27 ng/L	<1.5-<2.5 ng/L	NS	NS
PFOA [7]	B-932U	5.3 ng/L	<1.5-<2.5 ng/L	12 ng/L	NS
	B-932L	2.48 ng/L			
PFBS [4S]	B-932U	2.98 ng/L	<1.5-<2.5 ng/L	NS	NS
PFOS [8S]	B-932U	2.3 ng/L	<1.5-<2.5 ng/L	15 ng/L	NS
PFPeA [4]	B-932L	1.98 ng/L	<1.5-<2.5 ng/L	NS	NS
PFHxA [5]	B-932L	2.46 ng/L	<1.5-<2.5 ng/L	NS	NS

Note: "[4]" indicates number of carbons in the alkyl chain.
NS = No standard established

Refer to Tables 2 and 3 for information regarding analytes detected above laboratory reporting limits that did not exceed a standard or background concentration, which included sulfate (B-932U/L), barium (B-932U/L), and chromium (B-932L only). Volatile organic compounds (VOCs), including low-level 1,4-dioxane, were not detected in the July 2024 samples from B-932U and B-932L.

UPCOMING ACTIVITIES

The following activities are planned as part of the SSI, consistent with the Work Plan and NHDES' letters:

- Installation and development of five (5) monitoring wells (2 couplets "A" and "B", and MW-802L), and one (1) piezometer (PZ-C). Installation is anticipated for November 2024 using sonic drilling methods, pending contractor availability. The five monitoring wells will be sampled at least two weeks after development.
- Continued water level gauging via pressure transducers. A transducer will be installed in PZ-C following installation.

- Compilation of site information and preparation of a CSM Update Report, anticipated for Spring 2025.

CLOSING

We trust that this letter satisfies NHDES's requirements for an interim status update and transmittal of sampling results related to the SSI. Should you have questions regarding the information presented herein, or wish to discuss any of our findings and conclusions as presented in this report, please contact the undersigned at Sanborn Head or Joe Gay at NCES.

Very truly yours,
SANBORN, HEAD & ASSOCIATES, INC.

Lilly Corenthal, P.G.
Senior Project Manager

Timothy M. White, P.G.
Vice President

GAP/LGC/TMW: gap/lgc

Attachments

Table 1 – Water Level – Depth and Elevation
Table 2 – Summary of SSI Groundwater Monitoring Data
Table 3 – Summary of PFAS Groundwater Analytical Results
Figure 1 – Exploration Location Plan
Figure 2 – Groundwater Elevation Contour Plan (July 2024)
Attachment 1 – Field Documentation
    Logs
    Summary of Monitoring Well Development
    Groundwater Quality Field Sampling Summary
Attachment 2 – Transducer Plots
Attachment 3 – Analytical Laboratory Reports

cc: w/Attachments: Mr. Joe Gay, NCES
Mr. Kevin Roy, NCES
Town of Bethlehem

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Tables

TABLE 1
Water Level - Depth and Elevation
North Country Environmental Services, Inc.
Bethlehem, New Hampshire
Permit No. GWP-198704033-B-009

Location	Date	Reference Elevation (ft)	Reference Point	Depth to Water (ft)	Water Level Elevation (ft)
B-304DR	7/22/2024	1338.24	TPVC	46.72	1291.52
B-304DR	7/24/2024	1338.24	TPVC	46.74	1291.50
B-304DR	8/22/2024	1338.23	TPVC	46.64	1291.59
B-304UR	7/22/2024	1338.44	TPVC	47.50	1290.94
B-304UR	7/24/2024	1338.44	TPVC	47.52	1290.92
B-304UR	8/22/2024	1338.44	TPVC	47.23	1291.21
B-919M	7/22/2024	1344.06	TPVC	49.94	1294.12
B-919M	7/24/2024	1344.06	TPVC	49.93	1294.13
B-919M	8/22/2024	1344.06	TPVC	49.90	1294.16
B-919U	7/22/2024	1344.27	TPVC	38.41	1305.86
B-919U	7/24/2024	1344.27	TPVC	38.41	1305.86
B-919U	8/22/2024	1344.27	TPVC	38.17	1306.10
B-932U	07/02/24	1294.08	TPVC	17.17	1276.91
B-932U	07/22/24	1294.08	TPVC	16.99	1277.09
B-932L	07/02/24	1294.69	TPVC	15.50	1279.19
B-932L	07/22/24	1294.69	TPVC	16.70	1277.99
MW-604	7/22/2024	1319.83	TPVC	39.81	1280.02
MW-604	7/24/2024	1319.83	TPVC	39.83	1280.00
MW-604	8/22/2024	1319.83	TPVC	39.80	1280.03
PZ-A	7/12/2024	1330.46	TPVC	31.42	1299.04
PZ-A	7/24/2024	1330.46	TPVC	30.66	1299.80
PZ-A	8/22/2024	1330.46	TPVC	30.04	1300.42
PZ-B	7/9/2024	1346.09	TPVC	41.71	1304.38
PZ-B	7/24/2024	1346.09	TPVC	41.54	1304.55
PZ-B	8/22/2024	1346.09	TPVC	41.34	1304.75
SG-Pond 4	7/24/2024	1330.05	TOSG	1.29	1328.76

TABLE 2
Summary of SSI Groundwater Monitoring Data
North Country Environmental Services, Inc.
Bethlehem, New Hampshire
Permit No. GWP-198704033-B-007

Sample Location	Sample Date	Sample Type	Field Parameters / Indicator Parameters / Metals																			
			ft	SU	uS/cm	C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			Groundwater Elevation	pH	Specific Conductance	Temperature	Bromide	Chloride	Nitrate	Sulfate	Chemical Oxygen Demand	Total Kjeldahl Nitrogen (TKN)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Iron	Lead	Manganese	Nickel	Silver
Fraction			N	N	N	N	N	N	N	N	N	N	D	D	D	D	D	D	D	D	D	D	D
GW-1 (AGQS)									10	500			0.006	0.005	2	0.004	0.005	0.1		0.015	0.3	0.1	0.1
SMCL				6.5-8.5				250		250									0.3		0.05		0.1
SITE BACKGROUND 2024-07				6.3-8.7	125	5.6-11.9	0.1, 0.4 §	1.8	3.2		15	0.58	<0.001	0.00051	0.025	<0.001	<0.001	0.0017	0.41	<0.001	0.072	0.0027	<0.001
B-932U	07/22/24	N	1277.09	6.72	87	12.2	<0.1	6	<0.5	13	<10	<0.5	<0.001	<0.0005	0.0099	<0.001	<0.001	<0.001	<0.05	<0.001	*0.081*	<0.001	<0.001
B-932L	07/22/24	N	1275.99	7.54	157	12.3	<0.1	3.5	<0.5	9.1	<10	<0.5	<0.001	0.0015	0.0083	<0.001	<0.001	0.0014	<0.05	<0.001	0.019	<0.001	<0.001

Sample Location	Sample Date	Sample Type	Volatile Organic Compounds																												
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
			Acetone	Benzene	Bromomethane	Butanone (2-) (MEK)	Chlorobenzene (Monochlorobenzene)	Chloroethane	Chloroform (Trichloromethane)	Chloromethane	Dichlorobenzene (1,4-)	Dichlorodifluoromethane (CFC12)	Dichloroethane (1,1-)	Dichloroethene (1,1-)	Dichloroethene (cis-1,2-)	Diethyl Ether (Ethyl Ether)	Dioxane (1,4-)	Ethylbenzene	Hexanone (2-)	Methyl-2-pentanone (4-) (MIBK)	Methylene Chloride (Dichloromethane)	Methyl-tert Butyl Ether (MTBE)	Tetrachloroethene (PCE)	Tetrahydrofuran	Toluene	Trichloroethane (1,1,1-)	Trichloroethene (TCE)	Trichlorofluoromethane (CFC11)	Vinyl chloride	Xylene (m,p-)	Xylene (o-)
Fraction			N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
GW-1 (AGQS)			6000	5	10	4000	100		70	30	75	1000	81	7	70	1400	0.32	700		2000	5	13	5	600	1000	200	5	2000	2	10000	10000
SMCL																															
SITE BACKGROUND 2024-07			<10	<1	<2	<10	<1	<2	<1	<2	<1	<2	<1	<0.5	<1	<2	<0.25	<1	<10	<10	<1	<1	<1	<10	<1	<1	<1	<2	<1	<1	<1
B-932U	07/22/24	N	<10	<1	<2	<10	<1	<2	<1	<2	<1	<2	<1	<0.5	<1	<2	<0.25	<1	<10	<10	<1	<1	<1	<10	<1	<1	<1	<2	<1	<1	<1
B-932L	07/22/24	N	<10	<1	<2	<10	<1	<2	<1	<2	<1	<2	<1	<0.5	<1	<2	<0.25	<1	<10	<10	<1	<1	<1	<10	<1	<1	<1	<2	<1	<1	<1

1. Samples were collected by Sanborn Head on the dates indicated and analyzed by Eastern Analytical, Inc. (EAI) of Concord, New Hampshire.

2. A sample type of "N" indicates a normal sample.
A fraction of "D" indicates a dissolved (filtered) metals analysis; and a fraction type of "N" indicates not applicable for non-metals results.

3. Only those analytes detected one or more times in the current site wells are presented herein. Refer to the analytical laboratory reports for the complete list of parameters analyzed.

4. Blank cells indicate the analyte not analyzed on date indicated.

5. Groundwater elevation is presented in feet (ft), pH is presented in standard units (s.u.), specific conductance is presented in microSiemens per centimeter (µS/cm), and temperature is presented in degrees Celsius (°C). Indicator parameter and metals results are presented in milligrams per liter (mg/L) which is equivalent to parts per million. VOC results are presented in micrograms per liter (µg/L) which is equivalent to parts per billion (ppb).

6. "§" indicates background value for bromide is 0.4 mg/L for wells within the groundwater management zone (GMZ) established for the site, and 0.1 mg/L for wells outside the GMZ.
"<" indicates the analyte was not detected above the listed laboratory reporting limit.

7. "GW-1" refers to the New Hampshire GW-1 Groundwater Standards as defined in New Hampshire Department of Environmental Services (NHDES) Contaminated Sites Risk Characterization and Management Policy (RCMP) (January 1998, with 2000 through 2018 revisions/addenda). GW-1 Groundwater Standards are intended to be equivalent to the Ambient Groundwater Quality Standards (AGQSs) promulgated in Env-Or 600 (June 2015 with October 2016, September 2018, September 2019, May 2020, January 2021, and July 2021 amendments). For analytes where GW-1 and AGQS values differ, the values presented in this table reflect the AGQSs in the latest Env-Or 600 update. The AGQS/GW-1 Groundwater Standards are intended to be protective of groundwater as a source of drinking water.

"SMCL" refers to the USEPA Secondary Maximum Contaminant Levels as presented in the National Primary Drinking Water Standards (May 2009). The SMCLs are established as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor. These analytes are not considered to present a risk to human health at the SMCL.

8. **Bold** values exceed the GW-1 Groundwater Standard.
Italic values exceed the SMCL.
Yellow shading indicates a concentration exceeds background for the first time.

9. Refer to the 2024 Annual text for further information about calculation and selection of background concentrations.

TABLE 3
Summary of PFAS Groundwater Analytical Results
North Country Environmental Services, Inc.
Bethlehem, New Hampshire
Permit No. GWP-198704033-B-008

Sample Location	Sample Date	Sample Type	Concentrations in ng/L																									
			Perfluoroalkyl Carboxylic Acids											Perfluoroalkyl Sulfonic Acids							Fluorotelomers			Perfluoroalkane Sulfonamides		Perfluoroalkane Sulfonyl Substances		Total of Regulated PFAS	Total PFAS
			Perfluorobutanoic Acid (PFBA) [3]	Perfluoropentanoic Acid (PFPeA) [4]	Perfluorohexanoic Acid (PFHxA) [5]	Perfluoroheptanoic Acid (PFHpA) [6]	Perfluorooctanoic Acid (PFOA) [7]	Perfluorononanoic Acid (PFNA) [8]	Perfluorodecanoic Acid (PFDA) [9]	Perfluoroundecanoic Acid (PFUnA) [10]	Perfluorododecanoic Acid (PFDoA) [11]	Perfluorotridecanoic Acid (PFTrA) [12]	Perfluorotetradecanoic Acid (PFTeA) [13]	Perfluorobutanesulfonic Acid (PFBS) [4S]	Perfluoropentanesulfonic Acid (PFPeS) [5S]	Perfluorohexanesulfonic Acid (PFHxS) [6S]	Perfluoroheptanesulfonic Acid (PFHpS) [7S]	Perfluorooctanesulfonic Acid (PFOS) [8S]	Perfluorononanesulfonic Acid (PFNS) [9S]	Perfluorodecanesulfonic Acid (PFDS) [10S]	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	Perfluorooctanesulfonamide (FOSA)	N-methyl perfluorooctane sulfonamide (MeFOSA)	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)		
CAS Number			375-22-4	2706-90-3	307-24-4	375-85-9	335-67-1	375-95-1	335-76-2	2058-94-8	307-55-1	72629-94-8	376-06-7	375-73-5	2706-91-4	355-46-4	375-92-8	1763-23-1	68259-12-1	335-77-3	757124-72-4	27619-97-2	39108-34-4	754-91-6	31506-32-8	2991-50-6	2355-31-9	–	–
GW-1 (AGQS)							12	11								18		15										
SITE BACKGROUND 2024-07			<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<1.5-<2.5	<3.5-<4.5	<1.5-<2.5	<1.5-<2.5	–	–
B-932U	7/22/2024	N	<1.99	<1.99	<1.99	2.27	5.3	<1.99	<1.99	<1.99	<1.99	<1.99	<1.99	2.98	<1.99	<1.99	<1.99	2.3	<1.99	<1.99	<1.99	<1.99	<1.99	<1.99	<3.98	<1.99	<1.99	7.60	12.85
B-932L	7/22/2024	N	<1.95	1.98	2.46	<1.95	2.48	<1.95	<1.95	<1.95	<1.95	<1.95	<1.95	<1.95	<1.95	<1.95	<1.95	<1.95	<1.95	<1.95	<1.95	<1.95	<1.95	<1.95	<3.91	<1.95	<1.95	2.48	6.92
QC_FB	7/23/2024	FB	<1.89	<1.89	<1.89	<1.89	<1.89	<1.89	<1.89	<1.89	<1.89	<1.89	<1.89	<1.89	<1.89	<1.89	<1.89	<1.89	<1.89	<1.89	<1.89	<1.89	<1.89	<1.89	<3.78	<1.89	<1.89	ND	ND

1. Samples were collected by Sanborn Head on the dates indicated and analyzed by Eastern Analytical, Inc. (EAI) of Concord, New Hampshire.

2. A sample type of “N” indicates a normal sample. A sample type of "FB" indicates a field blank sample.

3. Per- and polyfluoroalkyl substances (PFAS) results are presented in nanograms per liter (ng/L) which is equivalent to parts per trillion (ppt).

4. "<" indicates the analyte was not detected above the listed laboratory reporting limit.

5. "GW-1" refers to the New Hampshire GW-1 Groundwater Standards as defined in New Hampshire Department of Environmental Services (NHDES) Contaminated Sites Risk Characterization and Management Policy (RCMP) (January 1998, with 2000 through 2018 revisions/addenda). GW-1 Groundwater Standards are intended to be equivalent to the Ambient Groundwater Quality Standards (AGQSs) promulgated in Env-Or 600 (June 2015 with October 2016, September 2018, September 2019, May 2020, January 2021, and July 2021 amendments). For analytes where GW-1 and AGQS values differ, the values presented in this table reflect the AGQSs in the latest Env-Or 600 update. The AGQS/GW-1 Groundwater Standards are intended to be protective of groundwater as a source of drinking water.

6. [3] = number of carbons in the alkyl chain for perfluorinated carboxylic acids (PFCAs). The carbon included in the carboxylic functional group is non-fluorinated and the remaining carbons (i.e., alkyl chain) are fluorinated.
[4S] = number of carbons in the alkyl chain for perfluorinated sulfonic acids (PFSAs). All of the carbons are fluorinated.

7. Yellow shading indicates a concentration exceeds background for the first time.

8. Refer to the 2024 Annual text for further information about calculation and selection of background concentrations.

Figures

NOTES:

1. THE AERIAL IMAGERY OUTSIDE THE LANDFILL LIMIT OF WASTE WAS OBTAINED FROM GOOGLE EARTH DATED OCTOBER 2022. AERIAL IMAGE INSIDE THE LANDFILL LIMIT OF WASTE WAS TAKEN ON JUNE 13, 2024 AND PROVIDED BY CMA.

2. TOPOGRAPHY INSIDE THE ACTIVE AREA WAS OBTAINED FROM AN JULY 2024 SURVEY.

3. THE LIMITS OF THE GMZ ARE BASED ON AN OCTOBER 2017 PLAN PREPARED BY HORIZONS ENGINEERING, INC. ENTITLED "GROUND WATER MANAGEMENT ZONE PLAN FOR LANDS OF NORTH COUNTRY ENVIRONMENTAL SERVICES, INC. AND FOREST ACQUISITIONS, INC."

LEGEND:

- FACILITY MONITORING WELL
- SURFACE WATER SAMPLING LOCATION
- U/S — INDICATES UPPER/SHALLOW WELL
- M — INDICATES SCREEN AT MIDDLE INTERVAL BETWEEN UPPER AND LOWER SCREENS
- D/L — INDICATES DEEP/LOWER WELL
- R — INDICATES REPLACEMENT WELL
- PIEZOMETER
- STAFF GAUGE
- RIP-RAP STONE
- LIMIT OF WETLAND DELINEATION
- GROUNDWATER MANAGEMENT ZONE
- TOWN OF BETHLEHEM ZONING LINE
- PROPERTY LINE

AR-3
TIE COURSE S 70°46'29" E 844.45'
FROM
AMMONOOSUC RIVER
S-109
S-108
AR-2
AR-1
SF-1
MUCHMORE ROAD
B-928U
B-928D
S-101
S-1 (MAIN SEEP)
OUTFALL 2
B932L
B932U
LAUREL LANE
B-304UR
B-304DR
MW-604
LIMIT OF WETLANDS DELINEATED BY B.H. KEITH ASSOCIATES IN APRIL 1999
PZ-A
SG-POND4
STORMWATER POND 4
PZ-B
B-919M
B-919U
B-919D
B-927M
B-927U
B-927L
B-909
B-917D
B-917U
OUTFALL 1
B-918D
B-918U
B-918M
MW-803
MW-802
B-916M
B-916U
B-916D
STAGE IV
PHASE I
B-103S
B-103D
TOWN DISTRICT II
TOWN DISTRICT V
STORMWATER POND 5
B-915M
B-915U
B-915D
STAGE V
PHASE I
PHASE II
PHASE II
B-931L
B-931U
B-926L
B-926U
STORMWWATER POND 6
STAGE II
PHASE I
MW-701
APPROXIMATE EXTENT OF FORMER UNLINED LANDFILL
B-930U
B-930L
STAGE I
PHASE I
STAGE III
PHASE III
PHASE II
STAGE IV
PHASE II
PHASE IV
B-929U
B-929L
STAGE VI
B-925U
B-925L
B-924L
B-924U
B-923U

SANBORN HEAD

GRAPHICAL SCALE
100' 50' 0 100' 200'

DRAWN BY:	E. WRIGHT
DESIGNED BY:	G. PANIK
REVIEWED BY:	T. WHITE
PROJECT MGR:	L. CORENTHAL
PIC:	T. WHITE
DATE:	SEPTEMBER 2024

NORTH COUNTRY ENVIRONMENTAL SERVICES, INC.
BETHLEHEM, NEW HAMPSHIRE

EXPLORATION LOCATION PLAN

PROJECT NUMBER: 1003.25

FIGURE NUMBER: 1

File:P:\2600s\2637.11\Graphics Files\CAD\GW Mon Rpt July2024\GW_Mon_FigsJuly24.dwg Plot Date: 8-20-24

NOTES:

1. THE GROUNDWATER ELEVATION CONTOURS SHOWN ARE BASED ON GROUNDWATER LEVELS MEASURED BY SANBORN HEAD PERSONNEL IN WELLS SCREENED ACROSS/NEAR TO THE WATER TABLE ON THE DATES INDICATED. VARIATIONS IN GROUNDWATER ELEVATIONS ARE EXPECTED TO OCCUR DUE TO CHANGES IN PRECIPITATION, TEMPERATURE, AND OTHER FACTORS NOT EVIDENT AT THE TIME WATER LEVEL MEASUREMENTS WERE OBTAINED.

2. THE GROUNDWATER ELEVATION CONTOURS WERE DEVELOPED USING GENERALLY-ACCEPTED HYDROGEOLOGIC PRACTICES, AND ARE INTENDED TO DEPICT INFERRED TRENDS IN GROUNDWATER LEVELS CONSISTENT WITH THE AVAILABLE INFORMATION. ACTUAL CONDITIONS MAY VARY FROM THOSE SHOWN AND OTHER INTERPRETATIONS ARE POSSIBLE.

3. ITALICIZED SURFACE WATER ELEVATIONS REPRESENT APPROXIMATE VALUES BASED ON SURVEY MEASUREMENTS IN DECEMBER 2023.

4. REFER TO FIGURE NO. 2 FOR ADDITIONAL NOTES.

LEGEND:

- GROUNDWATER MANAGEMENT ZONE
- 1304.3 — GROUNDWATER ELEVATION RECORDED AT WELL LOCATION ON JULY 22-24, 2024
- *1231.1* — APPROXIMATE SURFACE WATER ELEVATION
- 1305 — GROUNDWATER ELEVATION CONTOUR (DASHED WHERE LESS CONSTRAINED)

MAGNETIC

AR-3 *1193.9*
TIE COURSE S 70°46'29" E 844.45'
AMMONOOSUC RIVER
S-109 *1231.1*
AR-2 *1199.2*
AR-1 *1200.0*
S-108 *1245.1*
SF-1 *1204.4*
MUCHMORE ROAD
S-101 *1274.6*
B-928U 1289.0
B-928D
S-1 (MAIN SEEP) *1284.9*
OUTFALL 2
B932L
B932U 1277.1
LAUREL LANE
B-304UR 1290.9
B-304DR
MW-604 1280.0
1280
1285
1295
1300
PZ-A 1299.7
SG-POND4
LIMIT OF WETLANDS DELINEATED BY B.H. KEITH ASSOCIATES IN APRIL 1999
1290
STORMWATER POND 4
PZ-B 1304.6
B-919M
B-919U 1305.9
B-919D
B-927M
B-927U 1303.7
B-927L
1294.8
B-909
B-917D
OUTFALL 1
1305
1310
B-917U 1296.4
1300
1295
B-918D
B-918U 1305.8
B-918M
MW-803 1305.8
MW-802 1305.6
B-916M
B-916U 1313.2
B-916D
1315
TOWN DISTRICT II
TOWN DISTRICT V
STAGE IV
PHASE I
B-103S 1306.2
B-103D
STORMWATER POND 5
B-915M
B-915U 1315.4
B-915D
STAGE V
PHASE I
1305
PHASE II
PHASE II
B-931L
B-931U 1308.2
1310
B-926L
B-926U 1308.8
STORMWWATER POND 6
STAGE II
PHASE I
1315
1320
APPROXIMATE EXTENT OF FORMER UNLINED LANDFILL
MW-701 1317.6
1325
1330
1335
B-930U 1337.0
B-930L
STAGE I
PHASE I
STAGE III
PHASE III
PHASE II
PHASE IV
STAGE IV
PHASE II
B-929U 1337.0
B-929L
STAGE VI
1335
1340
B-925U 1340.1
B-925L
1320.1
B-923U
B-924L
B-924U 1334.9

SANBORN HEAD

GRAPHICAL SCALE
100' 50' 0 100' 200'

DRAWN BY:	E. WRIGHT
DESIGNED BY:	G. PANIK
REVIEWED BY:	T. WHITE
PROJECT MGR:	M. ESTABROOKS
PIC:	T. WHITE
DATE:	AUGUST 2024

NORTH COUNTRY ENVIRONMENTAL SERVICES, INC.
BETHLEHEM, NEW HAMPSHIRE

PROJECT NUMBER: 1003.25

GROUNDWATER ELEVATION CONTOUR PLAN (JULY 2024)

FIGURE NUMBER: 2

Attachment 1

Field Documentation

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: North Country Environmental Services
Location: Bethlehem, NH
Project No.: 1003.25

Log of Monitoring Well B-932 L

Ground Elevation: 1292.01 ± feet
TOC Elevation: 1294.91 ± feet
PVC Elevation: 1294.69 ± feet
Datum: NAVD 88

Drilling Method: Mobile Drill B-48 Track

Sampling Method: 4/5" Casing Drive and Wash with 2" O.D. Split Spoon

Drilling Company: Northern Drill Services, Inc.
Foreman: J. Beirholm
Date Started: 06/26/24 **Date Finished: 07/01/24**
Logged By: M. Stein **Checked By: L. Corenthal**

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Depth of Hole	Stab. Time
07/01/24	09:00	12.2'	Ground Surface	74'	74'	3 days

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/ Rec (in)	Field Testing Data	Stratum: Log	Description	Geologic Description	Well Diagram	Well Description
-2										2" Dia. Sch. 40 PVC Riser (-2.7 to 47.9')
										4" x 5' standpipe with #5401 lock (-2.6 to 1.4')
0	S1	0 - 2	2 3 4 4	24/12	FID: 3 ppmv		0' TOPSOIL 0.3	Dark brown, Moist. TOPSOIL. S-1 (0.3 to 2'): Loose, brown, fine to medium SAND, trace Silt. Moist.		Concrete Pad (0 to 0.5') Sand (0.5 to 3')
2										
4	S2	4 - 6	8 14 16 17	24/4	FID: 6 ppmv			S-2 (4 to 6'): Medium dense, brown, fine to medium SAND, trace Silt. Moist.		Bentonite Chips (3 to 6')
6										
							SAND			
8										
	S3	9 - 11	15 10 9 8	24/10	FID: 1 ppmv			S-3 (9 to 11'): Medium dense, brown, fine to coarse SAND, little Silt. Moist.		
10										Bentonite/Cement Grout (6 to 44')
12										
14	S4	14 - 16	4 3 3 3	24/10	FID: 1 ppmv		-----14'-----	S-4 (14 to 16'): Loose, olive brown, SILT and fine Sand. Moist.		
16							SILT & SAND			
18										
	S5	19 - 21	4 8 11 17	24/8	FID: 1 ppmv		-----19'-----	S-5 (19 to 21'): Medium dense, olive brown, SILT, some fine Sand. Moist.		
20							SANDY SILT			
22										

BORING LOG \\CONSERV1\SHDATA\1000S\1003.25\WORK\LOGS\1003.25 LOGS.GPJ 2017 SANBORN HEAD V1.GLB 2017 SANBORN HEAD V1.GDT 9/6/24

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: North Country Environmental Services
Location: Bethlehem, NH
Project No.: 1003.25

Log of Monitoring Well B-932 L

Ground Elevation: 1292.01 ± feet
TOC Elevation: 1294.91 ± feet
PVC Elevation: 1294.69 ± feet
Datum: NAVD 88

Drilling Method: Mobile Drill B-48 Track

Sampling Method: 4/5" Casing Drive and Wash with 2" O.D. Split Spoon

Drilling Company: Northern Drill Services, Inc.
Foreman: J. Beirholm
Date Started: 06/26/24 **Date Finished: 07/01/24**
Logged By: M. Stein **Checked By: L. Corenthal**

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Depth of Hole	Stab. Time
07/01/24	09:00	12.2'	Ground Surface	74'	74'	3 days

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/ Rec (in)	Field Testing Data	Stratum: Log	Description	Geologic Description	Well Diagram	Well Description
24	S6	24 - 25.4	30 64 100/5"	19/16	FID: 1 ppmv		SANDY SILT -----24'-----	S-6 (24 to 25.4'): Very dense, olive brown, SILT and fine Sand, pulverized Rock debris in tip of sampler. Moist.		
26							SILT & SAND			
28										Bentonite/Cement Grout (6 to 44')
	S7	29 - 31	23 35 33 31	24/13	FID: 1 ppmv		-----29'-----	S-7 (29 to 31'): Very dense, brown, fine to medium SAND, little Silt, slight orange stratifications. Wet.		
30										
32							SAND			
34	S8	34 - 36	22 24 27 32	24/18	FID: 1 ppmv		-----34'-----	S-8 (34 to 36'): Hard, olive, Clayey SILT and fine , Sand partings. Wet.		
36										
38										
40	S9	39 - 41	24 25 28 30	24/19	FID: 1 ppmv		CLAYEY SILT	S-9 (39 to 41'): Hard, similar to above. Wet.		
42										Bentonite/Cement Grout (6 to 44')
44	S10	44 - 46	17 21 26 25	24/17	FID: 2 ppmv			S-10 (44 to 46'): Hard, similar to above. Wet.		Bentonite Chips (44 to 46')
46										#1 Filter Sand (46 to 59.5')

BORING LOG \\CONSERV1\SHDATA\1000S\1003.25\WORK\LOGS\1003.25 LOGS.GPJ 2017 SANBORN HEAD V1.GLB 2017 SANBORN HEAD V1.GDT 9/6/24

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: North Country Environmental Services
Location: Bethlehem, NH
Project No.: 1003.25

Log of Monitoring Well B-932 L

Ground Elevation: 1292.01 ± feet
TOC Elevation: 1294.91 ± feet
PVC Elevation: 1294.69 ± feet
Datum: NAVD 88

Drilling Method: Mobile Drill B-48 Track

Sampling Method: 4/5" Casing Drive and Wash with 2" O.D. Split Spoon

Drilling Company: Northern Drill Services, Inc.
Foreman: J. Beirholm
Date Started: 06/26/24 **Date Finished: 07/01/24**
Logged By: M. Stein **Checked By: L. Corenthal**

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Depth of Hole	Stab. Time
07/01/24	09:00	12.2'	Ground Surface	74'	74'	3 days

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/ Rec (in)	Field Testing Data	Stratum: Log	Description	Geologic Description	Well Diagram	Well Description
48							CLAYEY SILT			
	S11	49 - 51	13 28 44 71	24/17	FID: 1 ppmv		-----49'-----	S-11A (49 to 50.3'): Hard, olive, SILT & CLAY. Wet.		
50							SILT & CLAY -----50.3'-----	S-11B (50.3 to 51'): Dense, olive brown, fine to coarse SAND, little Silt. Wet.		
52							SAND			
54	S12	54 - 56	31 25 63 92	24/12	FID: 1 ppmv		-----54'-----	S-12 (54 to 56'): Dense, olive, SAND and fine Sand. Wet.		2" Dia. Sch. 40 PVC Well Screen (0.006" Slots) (47.9 to 57.9')
56							SILT & SAND			
58										Silt Cap (57.9 to 58')
	S13	59 - 61	27 30 38 35	24/14	FID: 1 ppmv		-----59'-----	S-13 (59 to 61'): Dense, olive, fine SAND, some Silt. Stratified. Wet.		Bentonite Chips (59.5 to 72.4')
60										
62										
64	S14	64 - 66	20 36 38 39	24/17	FID: 2 ppmv			S-14 (64 to 66'): Dense, olive, fine SAND, some Silt, with seams of Clayey Silt. Wet.		
66							SILTY SAND			Bentonite Chips (59.5 to 72.4')
68										
	S15	69 - 69.9	18 100/5"	11/10	FID: 1 ppmv			S-15 (69 to 69.9'): Dense, similar to aboive. Gravel fragment in tip of sampler. Wet.		
70										
72										

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: North Country Environmental Services
Location: Bethlehem, NH
Project No.: 1003.25

Log of Monitoring Well B-932 L

Ground Elevation: 1292.01 ± feet
TOC Elevation: 1294.91 ± feet
PVC Elevation: 1294.69 ± feet
Datum: NAVD 88

Drilling Method: Mobile Drill B-48 Track

Sampling Method: 4/5" Casing Drive and Wash with 2" O.D. Split Spoon

Drilling Company: Northern Drill Services, Inc.

Foreman: J. Beirholm

Date Started: 06/26/24 **Date Finished: 07/01/24**

Logged By: M. Stein **Checked By: L. Corenthal**

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Depth of Hole	Stab. Time
07/01/24	09:00	12.2'	Ground Surface	74'	74'	3 days

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/ Rec (in)	Field Testing Data	Stratum: Log	Description	Geologic Description	Well Diagram	Well Description
74	S16	74 - 75.9	58 61 65 100/5"	23/11			SILTY SAND -----74'----- SILTY SAND & GRAVEL -----75.9'-----	S-16 (74 to 75.9'): Dense, olive, fine to coarse SAND, to fractured Gravel (Cobbles), some Silt. Wet. Boring terminated at 75.9 feet bgs due to Split-Spoon refusal.		Section 4" Casing (69 to 74') Sand (72.4 to 74')

NOTES:

1. Soil samples were screened for volatile organic compounds (VOCs) using a MiniRAE 2000 Photoionization Detector (PID) with a 10.6 eV lamp, calibrated to a 100 parts per million by volume (ppmv) isobutylene-in-air standard using a response factor of 1.0. Results are presented in ppmv; the typical detection limit is 1 ppmv. ND indicates not detected. NA indicates not available. The PID measures relative levels of VOCs. Although PID screening cannot be used directly to quantify VOC concentrations or identify individual compounds, the results can serve as a relative indicator for the presence of VOCs.
2. B-932L completed as an offset. The initial borehole was advanced to 74.8 ft bgs from June 24 to 27, 2024. Casing was observed to be broken during attempted well completion; native soils were measured at 48 feet below grade and the boring was backfilled with cement-bentonite grout to grade. The boring was offset, 5" casing was advanced to 23 feet and 4" casing was advanced to 74 feet. During well completion, the casing was inferred to be broken at 69 feet. The boring was backfilled with bentonite chips to 59.5 feet prior to well construction.
3. Approximately 1,100 gallons of potable water was used during drilling.

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: North Country Environmental Services

Location: Bethlehem, NH

Project No.: 1003.25

Log of Monitoring Well B-932 U

Ground Elevation: 1292.11 ± feet
TOC Elevation: 1295.03 ± feet
PVC Elevation: 1294.08 ± feet
Datum: NAVD 88

Drilling Method: Mobile Drill B-48 Track

Sampling Method: 4/5" Casing Drive and Wash with 2" O.D. Split Spoon

Drilling Company: Northern Drill Services, Inc.

Foreman: J. Beirholm

Date Started: 07/01/24 **Date Finished: 07/02/24**

Logged By: M. Stein **Checked By: L. Corenthal**

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Depth of Hole	Stab. Time
07/02/24	07:00	10.5'	Ground Surface	24'	24'	<1 day

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/ Rec (in)	Field Testing Data	Stratum: Log	Description	Geologic Description	Well Diagram	Well Description
-2										2" Dia. Sch. 40 PVC Riser (-2.7 to 6.9')
0							0' TOPSOIL 0.3	See log for B-932L for soil descriptions.		4" x 5' standpipe with #5401 lock (-2.7 to 1.3')
										Concrete Pad (0 to 0.5')
2										Filter Sand (0.5 to 3')
										Bentonite Chips (3 to 5')
4										
6										
							SAND			2" Dia. Sch. 40 PVC Well Screen (0.006" Slots) (6.9 to 21.9')
8										
10										
12										
14							-----14'-----			#1 Sand (5 to 24')
16							SILT & SAND			
18										
							-----19'-----			
20										
							SANDY SILT			Silt Cap (21.9 to 22')
22										
24							-----24'-----	Boring terminated at 24 feet bgs. No refusal encountered.		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: North Country Environmental Services
Location: Bethlehem, NH
Project No.: 1003.25

Log of Monitoring Well PZ-A

Ground Elevation: 1330.8 ± feet
PVC Elevation: 1330.46 ± feet
Datum: NAVD 88

Drilling Method: Mobile Drill B-48 Track

Sampling Method: 4/5" Casing Drive and Wash with 2" O.D. Split Spoon

Drilling Company: Northern Drill Services, Inc.
Foreman: J. Beirholm
Date Started: 07/08/24 **Date Finished: 07/10/24**
Logged By: M. Stein **Checked By: L. Corenthal**

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Depth of Hole	Stab. Time
07/09/24	07:05	34.7'	Ground Surface	44'	44'	<24 hours
07/10/24	10:30	29.8'	Ground Surface	Well Installed		2 days

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/ Rec (in)	Field Testing Data	Stratum: Log	Description	Geologic Description	Well Diagram	Well Description
0	S1	0 - 2	2 3 4 3	24/16	PID: 2 ppmv		0' TOPSOIL 0.2	S-1A (0 to 0.2'): Dark brown, TOPSOIL. S-1B (0.2 to 2'): Loose, olive brown, fine to medium SAND and Silt. Moist. FILL.		Concrete Pad (0 to 0.5') 6" Dia. Flushmounted Road Box Set in Concrete (0 to 0.5') Sand (0.6 to 3')
2										Bentonite Chips (3 to 27')
4	S2	4 - 6	9 12 11 12	24/13	PID: 2 ppmv		FILL	S-2 (4 to 6'): Medium dense, olive brown, SILT and fine Sand, little Gravel. Moist. FILL.		
6										
8										
	S3	9 - 11	13 26 25 31	24/16	PID: 2 ppmv		9'	S-3 (9 to 11'): Very dense, olive brown, fine to medium SAND, little Silt, seams of Clayey Silt. Stratified. Moist.		
10										
12										
14	S4	14 - 16	17 23 32 31	24/15	PID: 1 ppmv		SAND	S-4 (14 to 16'): Very dense, olive brown to brown, fine to coarse SAND, little Silt. Moist.		2" Dia. Sch. 40 PVC Riser (0.4 to 29.1')
16										
18										
	S5	19 - 21	14 27 29 30	24/12	PID: 1 ppmv			S-5A (19 to 20.7'): Very dense, brown to light brown, fine to coarse SAND, little Silt.		
20							20.7'	S-5B (20.7 to 21'): Very dense, olive, SILT, some fine Sand. Moist.		
22							SANDY SILT			
24	S6	24 - 26	23 25 33 35	24/12	PID: 2 ppmv		24'	S-6 (24 to 26'): Very dense, olive brown, SILT and fine Sand. Moist.		
26							SILT & SAND			Sand (27 to 44.2')
28										

BORING LOG \\CONSERV1\SHDATA\1000S\1003.25\WORK\LOGS\1003.25 LOGS.GPJ 2017 SANBORN HEAD V1.GLB 2017 SANBORN HEAD V1.GDT 9/6/24

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: North Country Environmental Services
Location: Bethlehem, NH
Project No.: 1003.25

Log of Monitoring Well PZ-A

Ground Elevation: 1330.8 ± feet
PVC Elevation: 1330.46 ± feet
Datum: NAVD 88

Drilling Method: Mobile Drill B-48 Track

Sampling Method: 4/5" Casing Drive and Wash with 2" O.D. Split Spoon

Drilling Company: Northern Drill Services, Inc.
Foreman: J. Beirholm
Date Started: 07/08/24 **Date Finished: 07/10/24**
Logged By: M. Stein **Checked By: L. Corenthal**

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Depth of Hole	Stab. Time
07/09/24	07:05	34.7'	Ground Surface	44'	44'	<24 hours
07/10/24	10:30	29.8'	Ground Surface	Well Installed		2 days

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/ Rec (in)	Field Testing Data	Stratum: Log	Description	Geologic Description	Well Diagram	Well Description
28										
	S7	29 - 31	20 23 26 37	24/17	PID: 3 ppmv			S-7 (29 to 31'): Dense, similar to above.		2" Dia. Sch. 40 PVC Well Screen (0.006" Slots) (29.1 to 44.1')
30										
32										
34	S8	34 - 36	18 25 30 32	24/17	PID: 3 ppmv			S-8 (34 to 36'): Very dense, olive brown to brown, SILT and fine Sand, with seams of Clayey Silt. Wet.		
36							SILT & SAND			
38										Sand (27 to 44.2')
	S9	39 - 41	24 30 34 39	24/15	PID: 2 ppmv			S-9 (39 to 41'): Very dense, similar to above. Wet.		
40										
42										
44	S10	44 - 46	22 31 33 36	24/18	PID: 3 ppmv		-----44'-----	S-10 (44 to 46'): Hard, olive, Clayey SILT, little fine Sand. Wet.		Silt Cap (44.1 to 44.2')
							CLAYEY SILT			Native Material (44.2 to 46')
46							-----46'-----	Boring terminated at 46 feet bgs. No refusal encountered.		
48										
50										
52										
54										
56										

NOTES:

1. Soil samples were screened for volatile organic compounds (VOCs) using a MiniRAE 2000 Photoionization Detector (PID) with a 10.6 eV lamp, calibrated to a 100 parts per million by volume (ppmv) isobutylene-in-air standard using a response factor of 1.0. Results are presented in ppmv; the typical detection limit is 1 ppmv. ND indicates not detected. NA indicates not available. The PID measures relative levels of VOCs. Although PID screening cannot be used directly to quantify VOC concentrations or identify individual compounds, the results can serve as a relative indicator for the presence of VOCs.
2. 5" casing was advanced to 19 feet and 4" casing was advanced to total depth.
3. Approximately 275 gallons of potable water was used during drilling.

BORING LOG \\CONSERV1\SHDATA\1000S\1003.25\WORK\LOGS\1003.25 LOGS.GPJ 2017 SANBORN HEAD V1.GLB 2017 SANBORN HEAD V1.GDT 9/6/24

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: North Country Environmental Services
Location: Bethlehem, NH
Project No.: 1003.25

Log of Monitoring Well PZ-B

Ground Elevation: 1343.32 ± feet
TOC Elevation: 1346.29 ± feet
PVC Elevation: 1346.09 ± feet
Datum: NAVD 88

Drilling Method: Mobile Drill B-48 Track

Sampling Method: 4/5" Casing Drive and Wash with 2" O.D. Split Spoon

Drilling Company: Northern Drill Services, Inc.
Foreman: J. Beirholm
Date Started: 07/02/24 **Date Finished: 07/08/24**
Logged By: M. Stein **Checked By: L. Corenthal**

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Depth of Hole	Stab. Time
07/03/24	07:05	43'	Ground Surface	54'	54'	<24 hrs
07/08/24	08:30	42.03'	Top of PVC		Well Installed	5 days

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/ Rec (in)	Field Testing Data	Stratum: Log	Description	Geologic Description	Well Diagram	Well Description
-2										Monitoring Well set in Standppe with Abus #54D1 lock and Concrete Pad (-3 to 0')
0	S-1	0 - 2	3 12 20 14	24/18	PID: 2 ppmv		-----0'----- TOPSOIL -----0.6'-----	S-1A (0 to 0.6'): Brown, Moist. TOPSOIL.		Concrete Pad (0 to 0.5') Sand (0.5 to 3')
								S-1B (0.6 to 2'): Dense, olive brown, fine SAND, some Silt, little Gravel. Moist. FILL.		
2							FILL			
4	S-2	4 - 6	10 9 9 10	24/11	PID: 2 ppmv		-----4'-----	S-2 (4 to 6'): Medium dense, olive brown, fine SAND and Silt. Moist.		Bentonite Chips (3 to 7')
6										Bentonite/Cement Grout (7 to 34')
8										
	S-3	9 - 11	5 5 3 4	24/7	PID: 1 ppmv		SILT & SAND	S-3 (9 to 11'): Loose, similar to above. Moist.		
10										
12										
14	S-4	14 - 16	9 13 17 15	24/14	PID: 1 ppmv		-----14'----- CLAYEY SILT	S-4A (14 to 15.7'): Very stiff, olive, Clayey SILT. with orange Stratifications Moist.		
16							-----15.7'----- SILTY SAND	S-4B (15.7 to 16'): Medium dense, olive, fine to medium SAND, some Silt. Moist.		2" Dia. Sch. 40 PVC Riser (-2.7 to 38.7')
18										
	S-5	19 - 21	18 20 17 21	24/16	PID: 1 ppmv		-----19'----- CLAYEY SILT	S-5 (19 to 21'): Hard, olive, Clayey SILT, little fine Sand, trace partings of Silt & Clay. Moist.		
20										
22										

BORING LOG \\CONSERV1\SHDATA\1000S\1003.25\WORK\LOGS\1003.25 LOGS.GPJ 2017 SANBORN HEAD V1.GLB 2017 SANBORN HEAD V1.GDT 9/6/24

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: North Country Environmental Services
Location: Bethlehem, NH
Project No.: 1003.25

Log of Monitoring Well PZ-B

Ground Elevation: 1343.32 ± feet
TOC Elevation: 1346.29 ± feet
PVC Elevation: 1346.09 ± feet
Datum: NAVD 88

Drilling Method: Mobile Drill B-48 Track

Sampling Method: 4/5" Casing Drive and Wash with 2" O.D. Split Spoon

Drilling Company: Northern Drill Services, Inc.
Foreman: J. Beirholm
Date Started: 07/02/24 **Date Finished: 07/08/24**
Logged By: M. Stein **Checked By: L. Corenthal**

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Depth of Hole	Stab. Time
07/03/24	07:05	43'	Ground Surface	54'	54'	<24 hrs
07/08/24	08:30	42.03'	Top of PVC		Well Installed	5 days

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/ Rec (in)	Field Testing Data	Stratum: Log	Description	Geologic Description	Well Diagram	Well Description
22							CLAYEY SILT			
24	S-6	24 - 26	20 26 39 34	24/12	PID: 1 ppmv		-----24'-----	S-6 (24 to 26'): Very dense, brown, fine to medium SAND, little Silt, trace Gravel. Moist.		
26										
28										Bentonite/Cement Grout (27')
	S-7	29 - 31	27 36 31 35	24/14	PID: 1 ppmv			S-7 (29 to 31'): Very dense, brown, fine to coarse SAND, little Gravel, little Silt.		
30										
32										
34	S-8	34 - 36	30 31 30 45	24/12	PID: 1 ppmv			S-8 (34 to 36'): Very dense, brown, fine to medium SAND, little Silt, trace Gravel.		
36							SAND			Bentonite Chips (34 to 37')
										#1 Sand (37 to 54')
38										
	S-9	39 - 41	27 33 42 39	24/15	PID: 1 ppmv			S-9 (39 to 41'): Very dense, olive brown, fine to coarse SAND, little Silt. orange Stratifications near bottom of recovery Moist.		2" Dia. Sch. 40 PVC Well Screen (0.006" Slots) (38.7 to 53.7')
40										
42										
44	S-10	44 - 46	24 30 36 33	24/12	PID: 1 ppmv			S-10 (44 to 46'): Very dense, olive brown, fine to coarse SAND, trace Silt, trace Gravel. Wet.		
46										

BORING LOG \\CONSERV1\SHDATA\1000S\1003.25\WORK\LOGS\1003.25 LOGS.GPJ 2017 SANBORN HEAD V1.GLB 2017 SANBORN HEAD V1.GDT 9/6/24

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: North Country Environmental Services

Location: Bethlehem, NH

Project No.: 1003.25

Log of Monitoring Well PZ-B

Ground Elevation: 1343.32 ± feet
TOC Elevation: 1346.29 ± feet
PVC Elevation: 1346.09 ± feet
Datum: NAVD 88

Drilling Method: Mobile Drill B-48 Track

Sampling Method: 4/5" Casing Drive and Wash with 2" O.D. Split Spoon

Drilling Company: Northern Drill Services, Inc.

Foreman: J. Beirholm

Date Started: 07/02/24 **Date Finished: 07/08/24**

Logged By: M. Stein **Checked By: L. Corenthal**

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Depth of Hole	Stab. Time
07/03/24	07:05	43'	Ground Surface	54'	54'	<24 hrs
07/08/24	08:30	42.03'	Top of PVC		Well Installed	5 days

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/ Rec (in)	Field Testing Data	Stratum: Log	Description	Geologic Description	Well Diagram	Well Description
48										
	S-11	49 - 51	18 18 19 17	24/10	PID: 1 ppmv		SAND	S-11 (49 to 51'): Dense, olive gray, fine to coarse SAND, little Silt, trace Gravel. Wet.		
50										#1 Sand (50')
52										
54	S-12	54 - 56	11 17 21 25	24/20	PID: 1 ppmv		-----54'----- SILT & SAND	S-12 (54 to 56'): Dense, olive gray, SILT and fine Sand. Wet.		Silt Cap (53.7 to 53.8')
56							-----56'-----	Boring terminated at 56 feet bgs. No refusal encountered.		
58										
60										
62										
64										
66										
68										
70										
72										

NOTES:

1. Soil samples were screened for volatile organic compounds (VOCs) using a MiniRAE 2000 Photoionization Detector (PID) with a 10.6 eV lamp, calibrated to a 100 parts per million by volume (ppmv) isobutylene-in-air standard using a response factor of 1.0. Results are presented in ppmv; the typical detection limit is 1 ppmv. ND indicates not detected. NA indicates not available. The PID measures relative levels of VOCs. Although PID screening cannot be used directly to quantify VOC concentrations or identify individual compounds, the results can serve as a relative indicator for the presence of VOCs.
2. 5" casing was advanced to 19 feet and 4" casing was advanced to total depth.
3. Approximately 350 gallons of potable water was used during drilling.

Groundwater Quality Field Sampling Summary

SANBORN HEAD

Project Number:	2637.11	Date(s):	July 22, 2024
Project Name:	North Country Environmental Services, Inc.	Project Manager:	T. White, M. Estabrooks
Project Location:	Bethlehem, New Hampshire	Collector(s):	M. Stein
pH, Conductivity, Temperature Meter(s): Oakton PC 450		Weather:	Clear, 60-70s°F
Water Level Meter(s): Heron Dipper T	Turbidity: Hach 2100Q		

Field Measurements

Sampling Location	Sample Date	Sample Time	Ref. Point	Well Dia.	Ref. Point Elev. (ft)	Depth to Water (ft)	Water Table Elev. (ft)	Depth to Bottom Plunked July 2024 (ft Ref Pt)	Surface Completion Type: Standpipe (SP) Vault (V)	Approx. PVC Height (ft)		pH (S.U.)	Specific Conductance (µS/cm)	Temp. (°C)	Turbidity (NTU)	Well Secured?		Approx. Gallons Purged	Target 3x Well Volume?	Purge/Sample Device	Comment No.
										July 2024 Height	AG or BG?					On Arrival	After Sampling				
B-932U	07/22/24	10:30	TPVC	2"	1294.08	16.99	1277.09	24.70	SP	2.7	AG	6.72	87	12.2	>1,000	Y	Y	8.5	Y	Ded. Bailer	1,3
B-932L	07/22/24	10:19	TPVC	2"	1292.69	16.70	1275.99	60.65	SP	2.7	AG	7.54	157	12.3	761	Y	Y	21.25	Y	Ded. Waterra	2,3

Comments

AG = Above ground
BG = Below ground
1. The monitoring well was purged using a dedicated polyethylene bailer prior to collecting the groundwater sample (using the bailer).
2. The monitoring well was purged using a dedicated Waterra® inertial pump and polyethylene tubing prior to collecting the groundwater sample (directly from the pump discharge line).
3. Sampled for PFAS. Only PFAS samples were screened for turbidity to support laboratory analysis.

Summary of Monitoring Well Development

SANBORN HEAD	**Project Number:** 1003.25	**Date:** July 2, 9, & 12 2024
	Project Name: North Country Environmental Services, Inc.	**Project Manager:** L. Corenthal
	Project Location: Bethlehem, NH	**Field Representative:** M. Stein
Equipment Used: Pro-Active Mega Monsoon, Oackton PC450, Heron Dipper-T		

Well	Well Installation Date	Date Development Performed	Water Volume Added During Drilling (gal)	Pre-Development Water Level (ft ref. TPVC)	Pumping Duration (min)	Approximate Volume Purged (gal)	Fine Sand/Silt @ Bottom of Well	Depth to Bottom (ft ref. TPVC)		Turbidity (NTU) Pre- & Post-Development		pH (s.u.) Pre- & Post-Development		Sp. Cond. (µS/cm) Pre- & Post-Development		Temperature (°C) Pre- & Post-Development		Comment
								Pre-	Post-	Pre-	Post-	Pre-	Post-	Pre-	Post-	Pre-	Post-	
B-932U	7/2/2024	7/2/2024	80	17.17	7	12.5	Trace	24.70	24.70	>1,000	>1,000	6.43	6.95	172.8	103.0	10.1	10.5	1,3
B-932L	7/1/2024	7/2/2024	1,100	15.50	46	40	Y	60.55	60.65	>1,000	>1,000	11.55	7.80	1,436	169.3	12.3	12.3	1,2
PZ-A	7/10/2024	7/12/2024	275	31.42	8	4.5	Y	43.75	43.82	>1,000	>1,000	6.83	7.51	87.53	82.29	16.5	16.4	3
PZ-B	7/8/2024	7/9/2024	350	41.71	14	15	Y	56.40	56.52	>1,000	>1,000	5.76	6.18	272.2	292.2	17.1	17.0	1,2

Comments

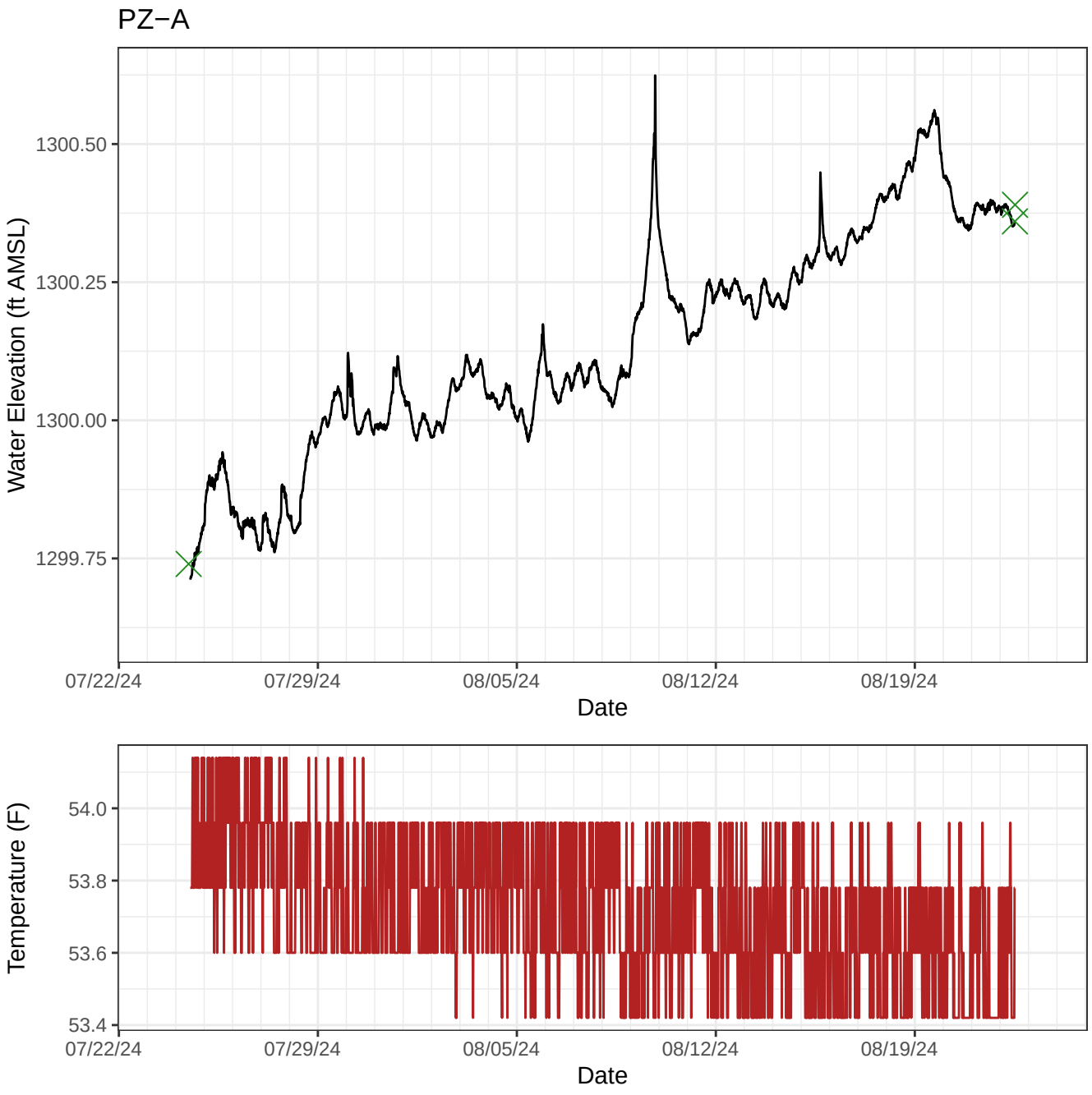
1. Monitoring well developed ≥ 5 times the well volume.

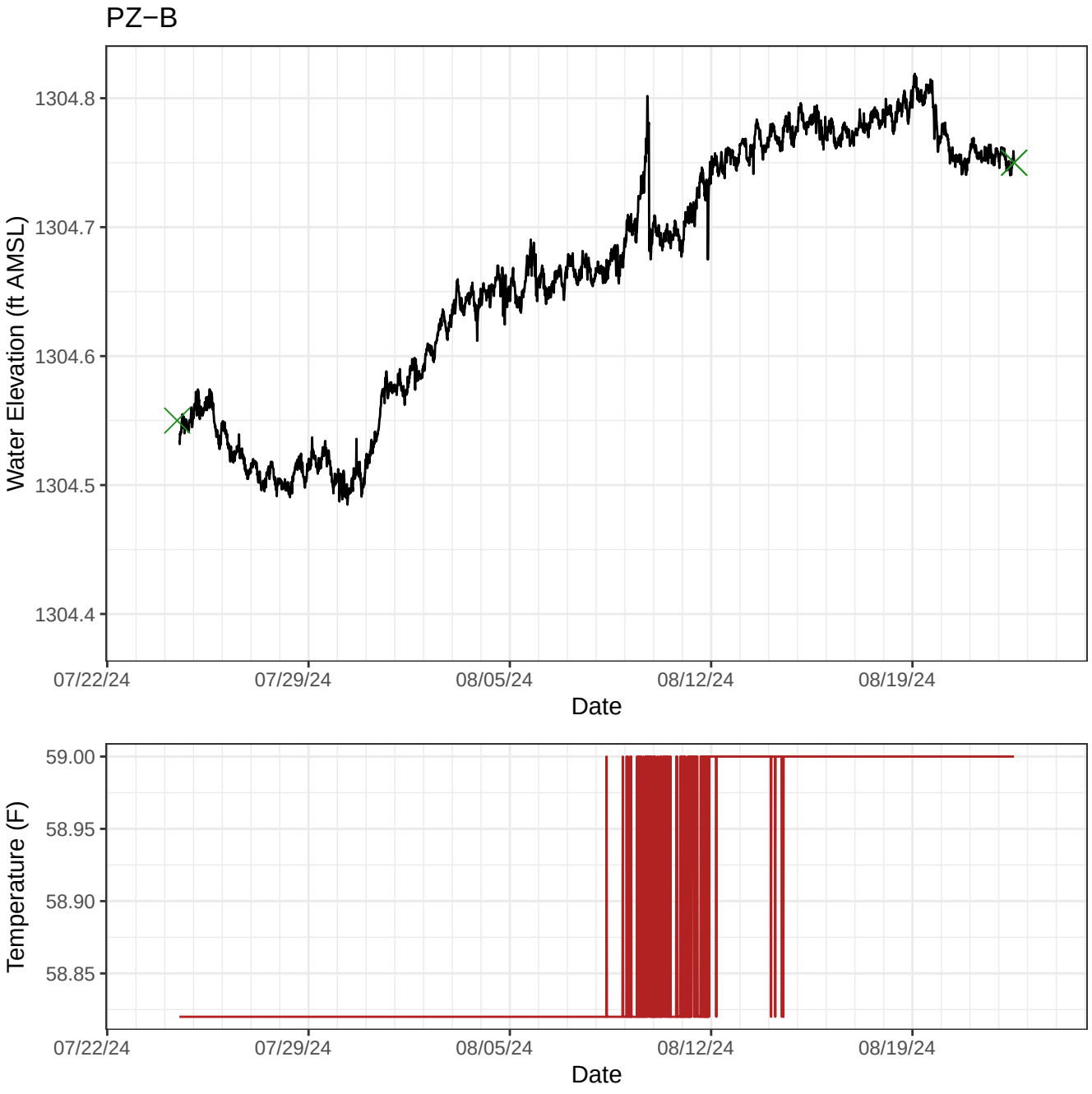
2. Good recharge was noted.

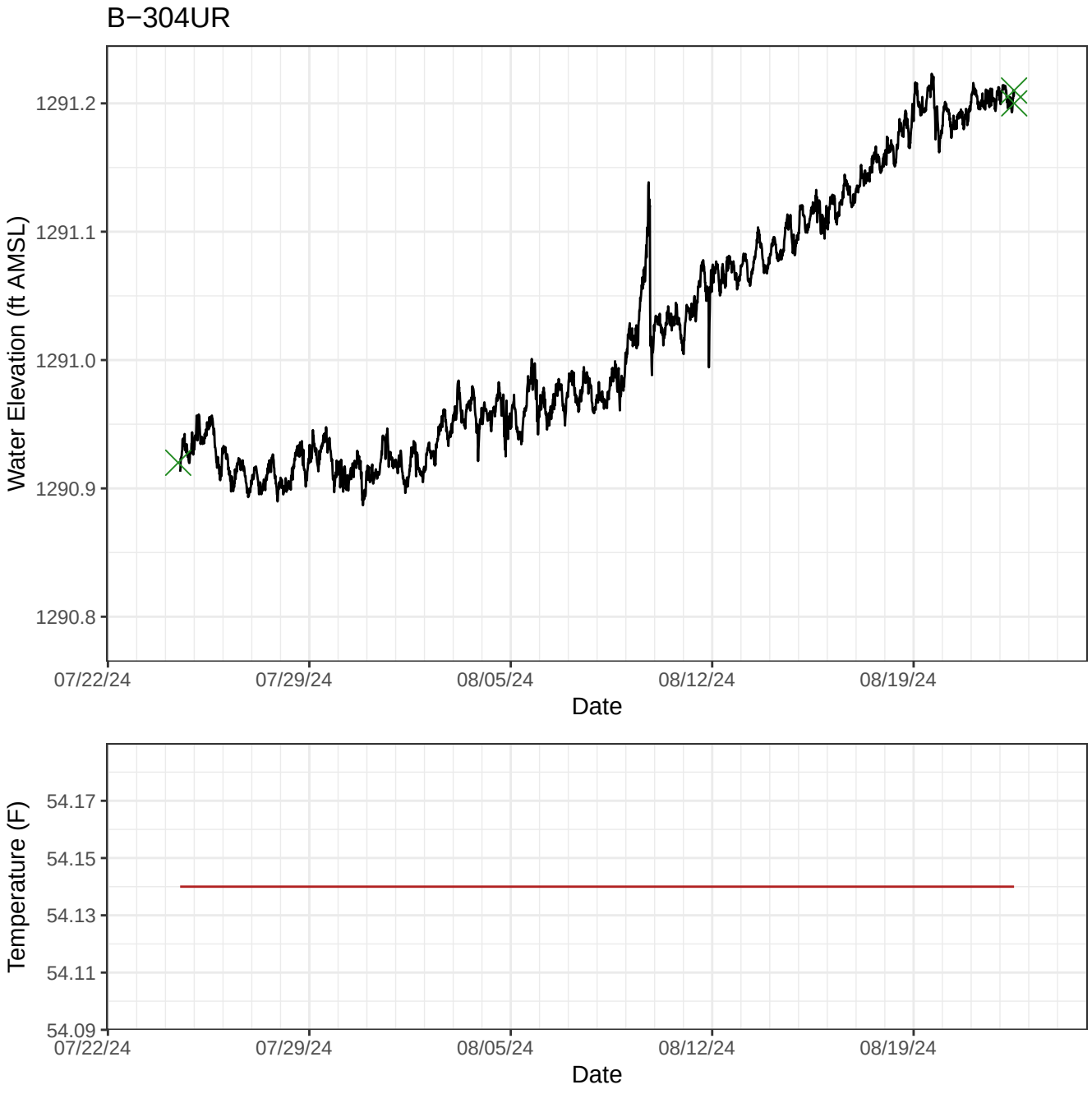
3. Monitoring well purged near dry. Recharge noted.

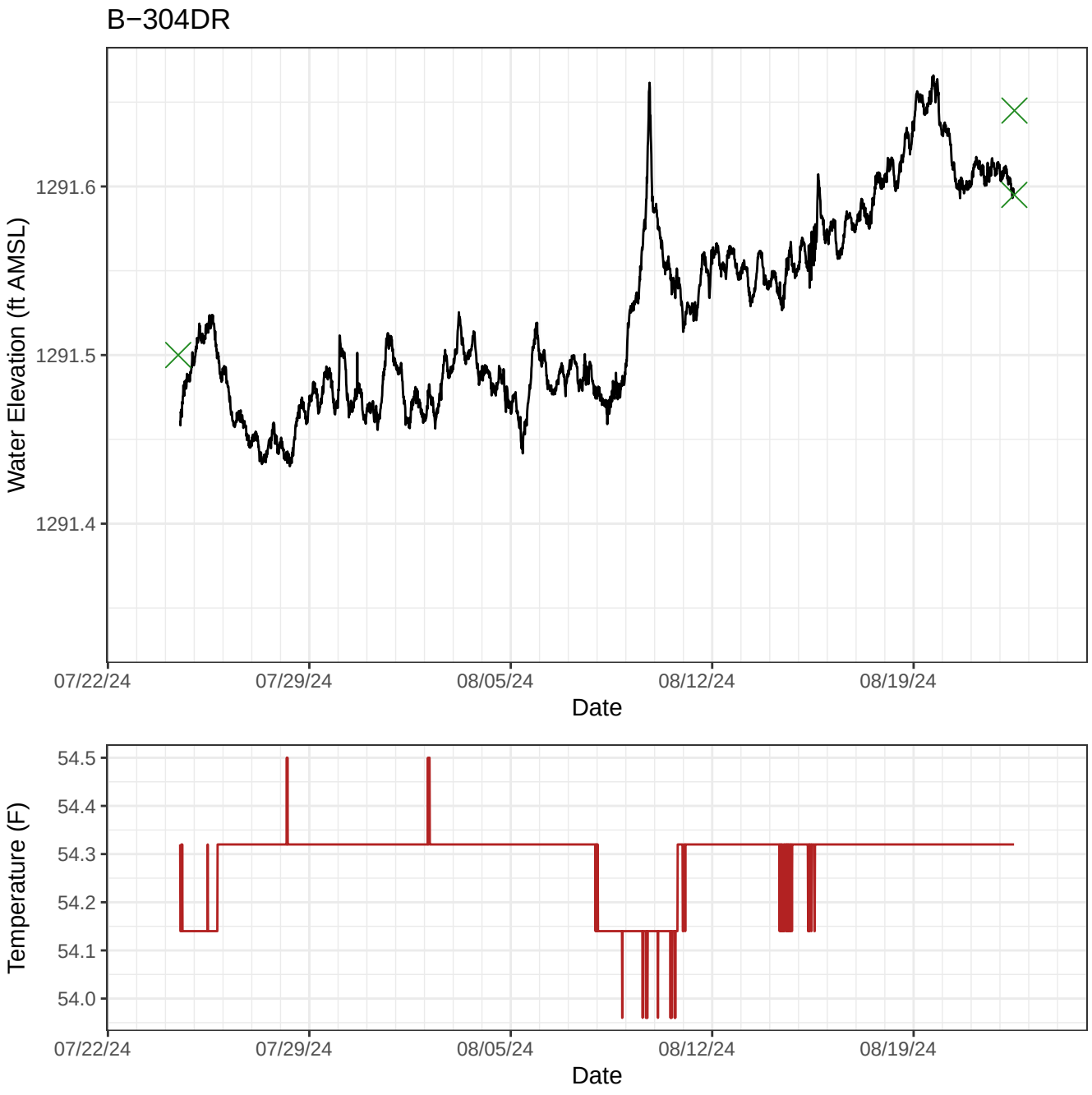
Attachment 2

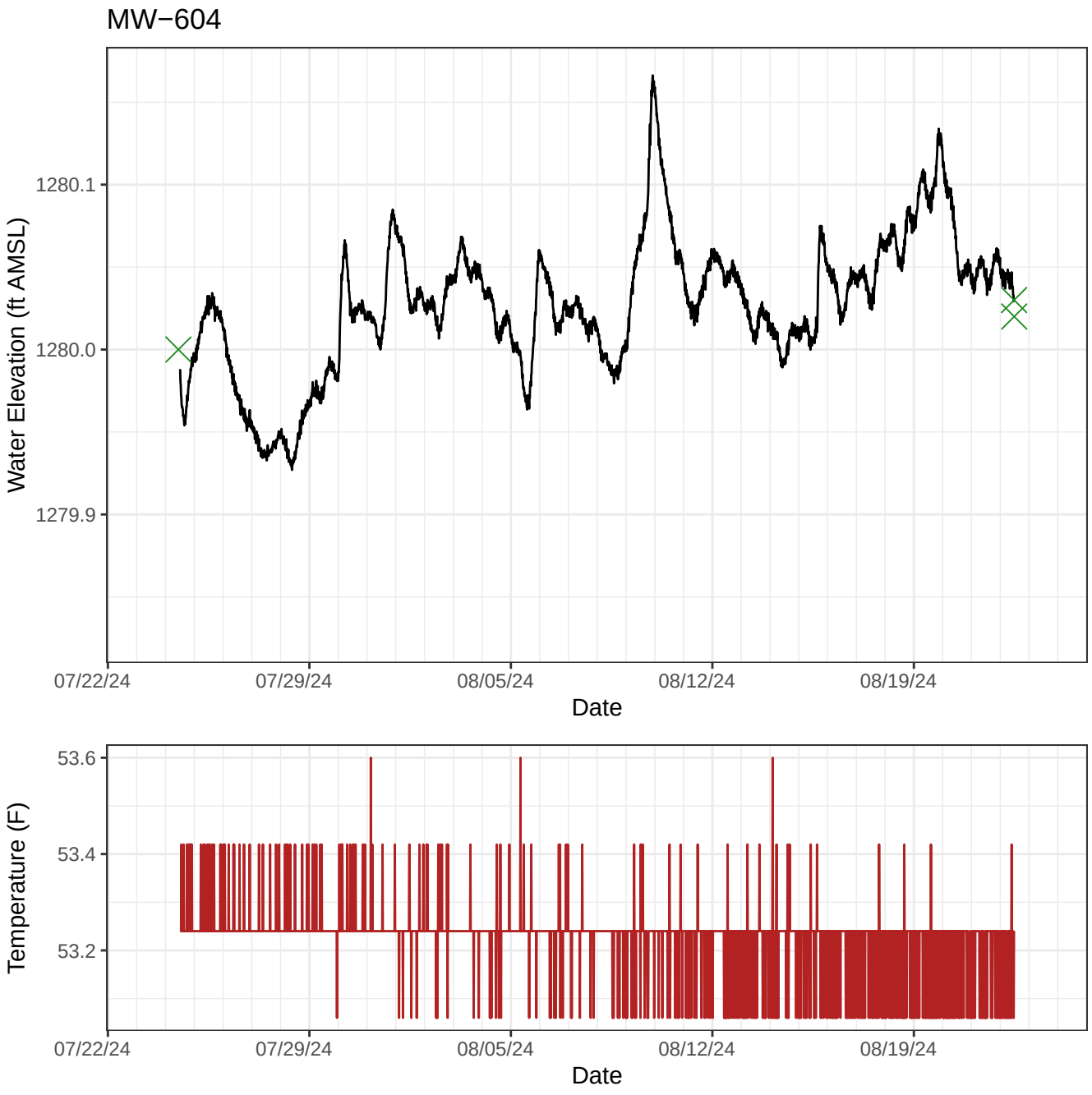
Transducer Plots

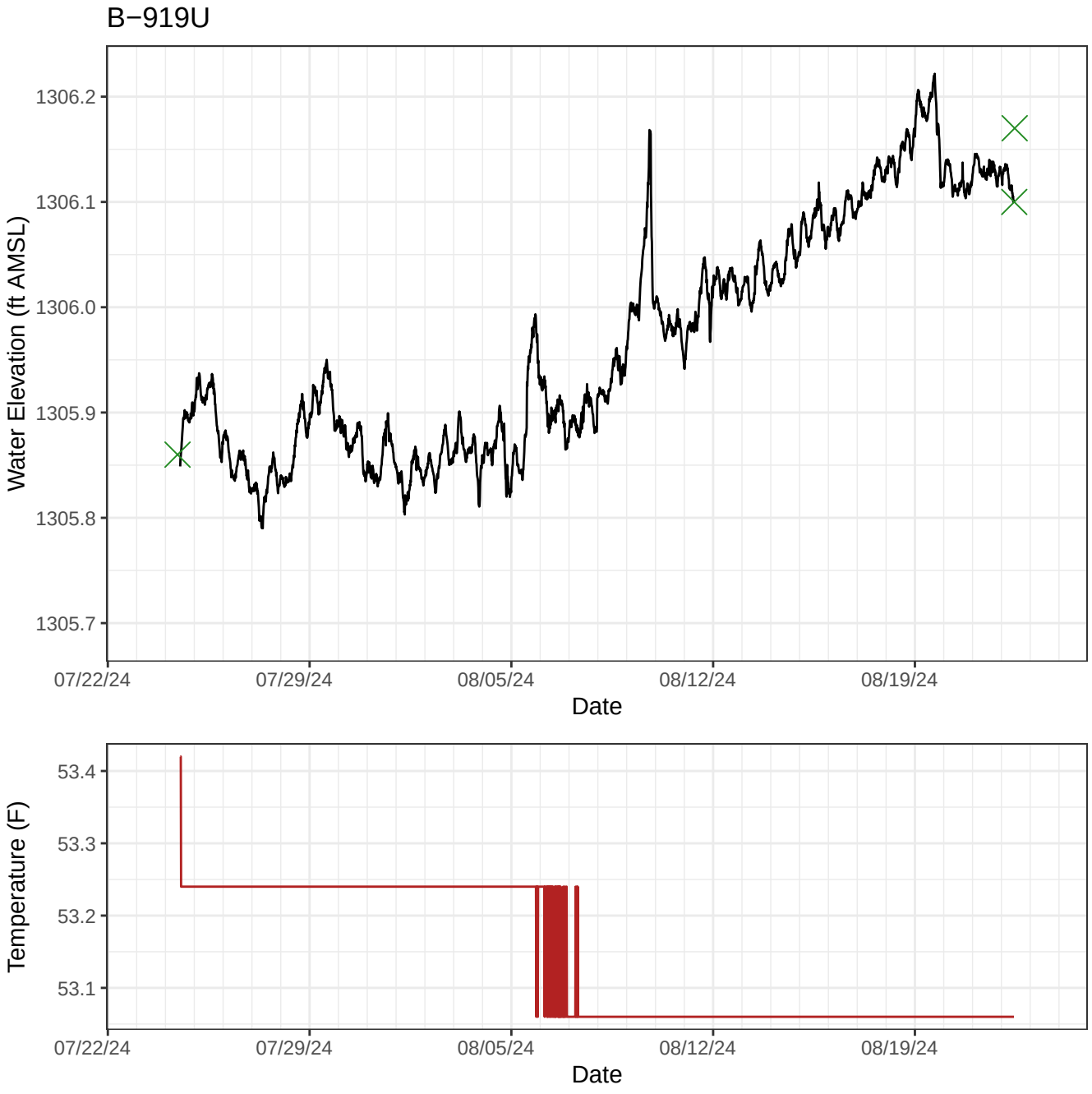

PZ−A
Water Elevation (ft AMSL)
1300.50
1300.25
1300.00
1299.75
07/22/24
07/29/24
08/05/24
08/12/24
08/19/24
Date
Temperature (F)
54.0
53.8
53.6
53.4
07/22/24
07/29/24
08/05/24
08/12/24
08/19/24
Date

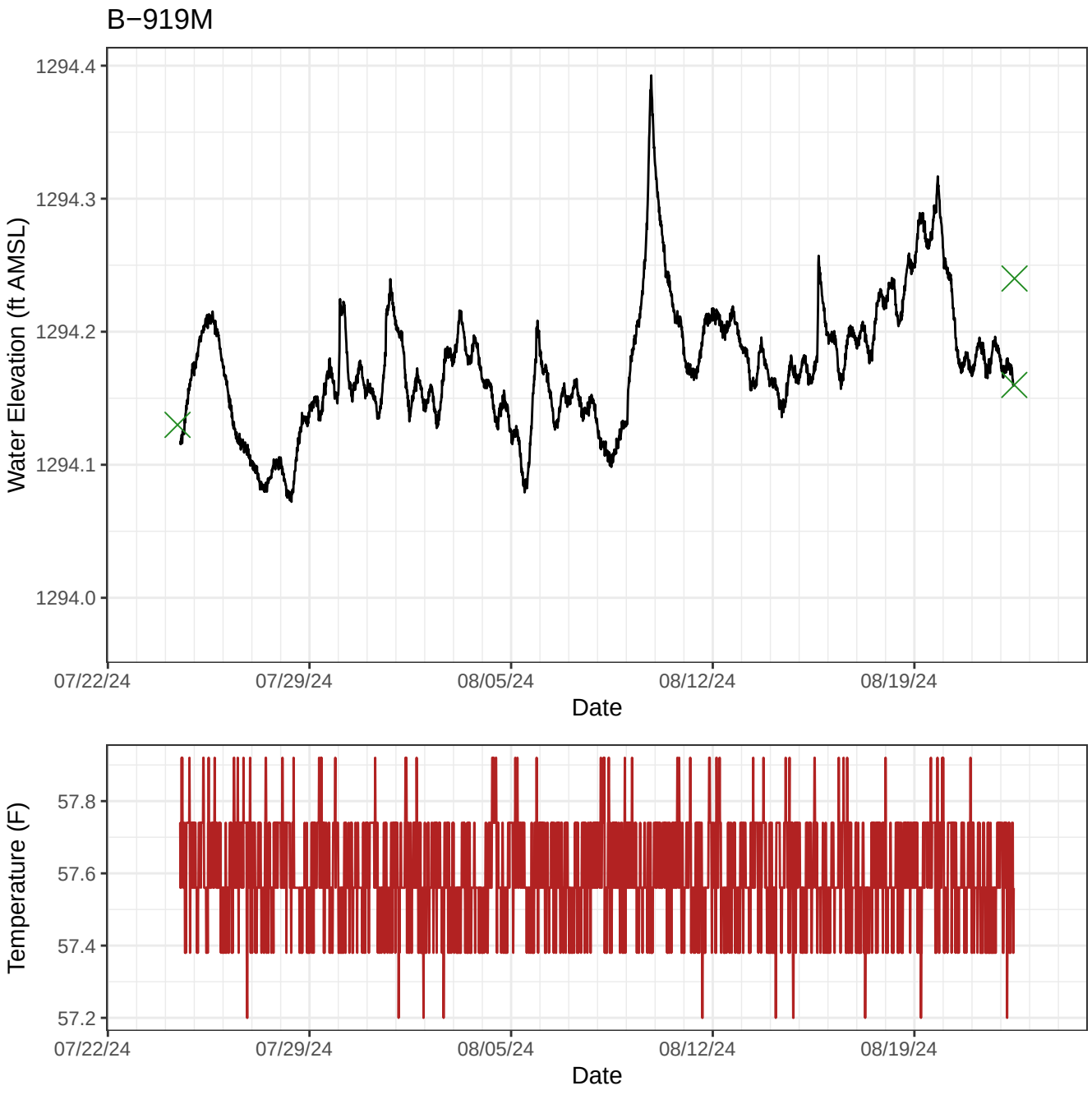

PZ−B
Water Elevation (ft AMSL)
1304.8
1304.7
1304.6
1304.5
1304.4
07/22/24
07/29/24
08/05/24
08/12/24
08/19/24
Date
Temperature (F)
59.00
58.95
58.90
58.85
07/22/24
07/29/24
08/05/24
08/12/24
08/19/24
Date

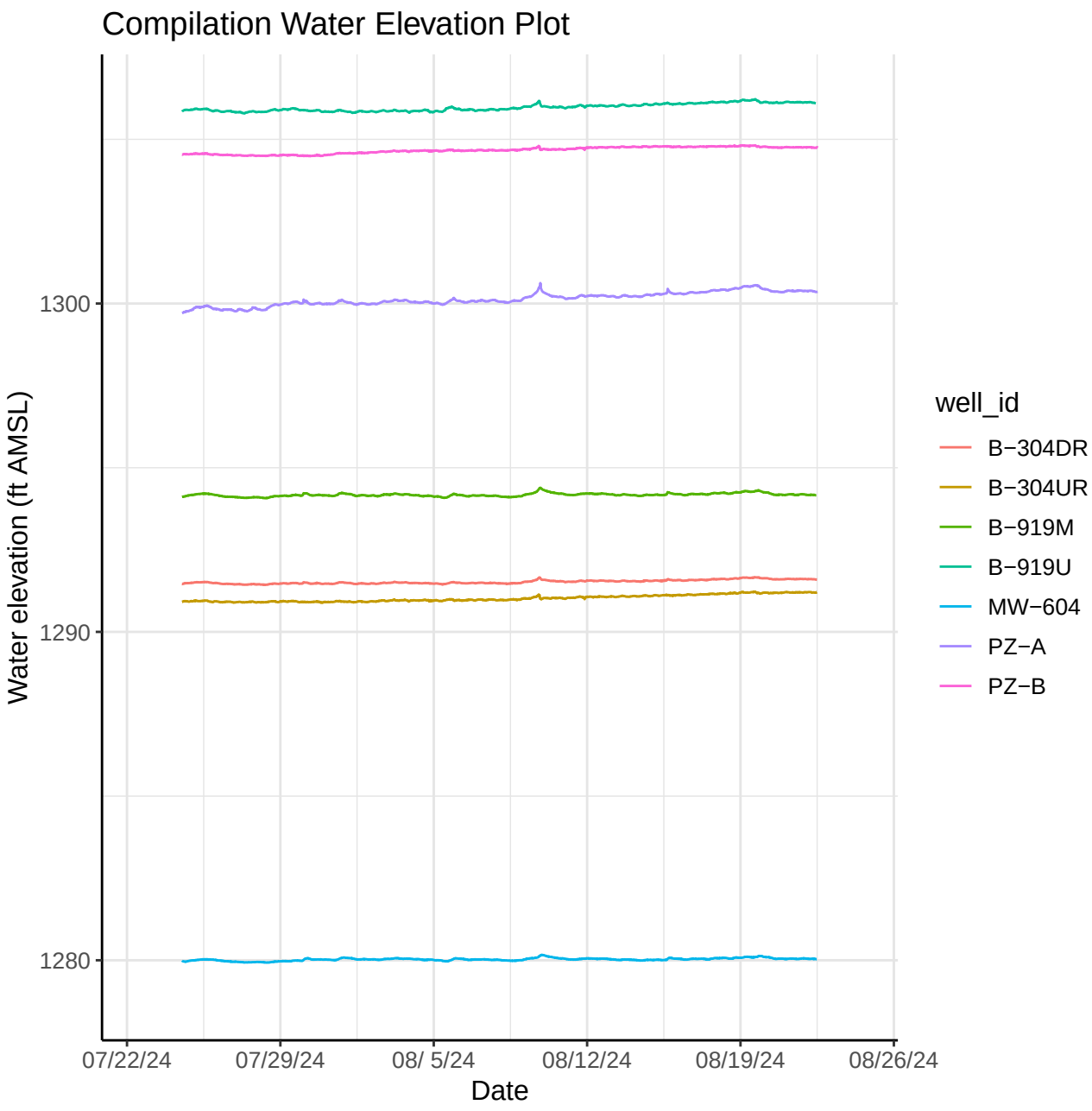

B−304UR
Water Elevation (ft AMSL)
1291.2
1291.1
1291.0
1290.9
1290.8
07/22/24
07/29/24
08/05/24
08/12/24
08/19/24
Date
Temperature (F)
54.17
54.15
54.13
54.11
54.09
07/22/24
07/29/24
08/05/24
08/12/24
08/19/24
Date


B−304DR
Water Elevation (ft AMSL)
1291.6
1291.5
1291.4
07/22/24
07/29/24
08/05/24
08/12/24
08/19/24
Date
Temperature (F)
54.5
54.4
54.3
54.2
54.1
54.0
07/22/24
07/29/24
08/05/24
08/12/24
08/19/24
Date


MW−604
Water Elevation (ft AMSL)
1280.1
1280.0
1279.9
07/22/24
07/29/24
08/05/24
08/12/24
08/19/24
Date
Temperature (F)
53.6
53.4
53.2
07/22/24
07/29/24
08/05/24
08/12/24
08/19/24
Date


B−919U
Water Elevation (ft AMSL)
1306.2
1306.1
1306.0
1305.9
1305.8
1305.7
07/22/24
07/29/24
08/05/24
08/12/24
08/19/24
Date
Temperature (F)
53.4
53.3
53.2
53.1
07/22/24
07/29/24
08/05/24
08/12/24
08/19/24
Date


B−919M
Water Elevation (ft AMSL)
1294.4
1294.3
1294.2
1294.1
1294.0
07/22/24
07/29/24
08/05/24
08/12/24
08/19/24
Date
Temperature (F)
57.8
57.6
57.4
57.2
07/22/24
07/29/24
08/05/24
08/12/24
08/19/24
Date


Compilation Water Elevation Plot
Water elevation (ft AMSL)
1300
1290
1280
07/22/24
07/29/24
08/ 5/24
08/12/24
08/19/24
08/26/24
Date
well_id
B−304DR
B−304UR
B−919M
B−919U
MW−604
PZ−A
PZ−B

Attachment 3

Analytical Laboratory Reports

Eastern Analytical, Inc.

professional laboratory and drilling services

Matt Estabrooks
Sanborn, Head & Associates, Inc. (NH)
6 Bedford Farms Drive, Suite 201
Bedford , NH 03110

Laboratory Report for:

Eastern Analytical, Inc. ID: 282449
Client Identification: NCES | Groundwater SSI | 2637.11
Date Received: 7/23/2024

Enclosed are the analytical results per the Chain of Custody for sample(s) in the referenced project. All analyses were performed in accordance with our QA/QC Program, NELAP and other applicable state requirements. All quality control criteria was within acceptance criteria unless noted on the report pages. Results are for the exclusive use of the client named on this report and will not be released to a third party without consent.

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

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

< : "less than" followed by the reporting limit
> : "greater than" followed by the reporting limit
%R : % Recovery

Certifications:
Eastern Analytical, Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269), Vermont (VT1012), New York (12072) and West Virginia (9910C). Please refer to our website at www.easternanalytical.com for a copy of our certificates and accredited parameters.

References:

- EPA 600/4-79-020, 1983
- Standard Methods for Examination of Water and Wastewater, 20th, 21st, 22nd & 23rd edition or noted revision year.
- Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
- Hach Water Analysis Handbook, 4th edition, 1992
- ASTM International

If you have any questions regarding the results contained within, please feel free to contact customer service. Unless otherwise requested, we will dispose of the sample(s) 6 weeks from the sample receipt date.

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

Sincerely,

Lorraine Olashaw, Lab Director — 8.2.24 Date

SAMPLE CONDITIONS PAGE

EAI ID#: **282449**

Client: **Sanborn, Head & Associates, Inc. (NH)**

Client Designation: **NCES | Groundwater SSI | 2637.11**

Temperature upon receipt (°C): 3.2 **Received on ice or cold packs (Yes/No): Y**

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date/Time Sampled		Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
282449.01	B-932U_20240722	7/23/24	7/22/24	10:30	aqueous		Adheres to Sample Acceptance Policy
282449.02	B-932L_20240722	7/23/24	7/22/24	10:19	aqueous		Adheres to Sample Acceptance Policy
282449.03	SSI-TB-GW-01_20240722	7/23/24	7/22/24	10:45	aqueous		Adheres to Sample Acceptance Policy
282449.04	SSI-TB-LL-GW-01_20240722	7/23/24	7/22/24	10:45	aqueous		Adheres to Sample Acceptance Policy

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

Unless otherwise noted:

- *Hold times, preservation, container types, and sample conditions adhered to EPA Protocol.*
- *Solid samples are reported on a dry weight basis, unless otherwise noted. pH/Corrosivity, Flashpoint, Ignitability, Paint Filter, Conductivity and Specific Gravity are always reported on an "as received" basis.*
- *Analysis of pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite were performed at the laboratory outside of the recommended 15 minute hold time.*
- *Samples collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures.*

LABORATORY REPORT

EAI ID#: **282449**

Client: **Sanborn, Head & Associates, Inc. (NH)**

Client Designation: **NCES | Groundwater SSI | 2637.11**

Sample ID:	B-932U_20240722	B-932L_20240722	SSI-TB-GW-01_20240722
Lab Sample ID:	282449.01	282449.02	282449.03
Matrix:	aqueous	aqueous	aqueous
Date Sampled:	7/22/24	7/22/24	7/22/24
Date Received:	7/23/24	7/23/24	7/23/24
Units:	ug/L	ug/L	ug/L
Date of Analysis:	7/25/24	7/25/24	7/25/24
Analyst:	DGM	DGM	DGM
Method:	8260C	8260C	8260C
Dilution Factor:	1	1	1
Dichlorodifluoromethane	< 2	< 2	< 2
Chloromethane	< 2	< 2	< 2
Vinyl chloride	< 1	< 1	< 1
Bromomethane	< 2	< 2	< 2
Chloroethane	< 2	< 2	< 2
Trichlorofluoromethane	< 2	< 2	< 2
Diethyl Ether	< 2	< 2	< 2
Acetone	< 10	< 10	< 10
1,1-Dichloroethene	< 0.5	< 0.5	< 0.5
tert-Butyl Alcohol (TBA)	< 30	< 30	< 30
Methylene chloride	< 1	< 1	< 1
Carbon disulfide	< 2	< 2	< 2
Methyl-t-butyl ether(MTBE)	< 1	< 1	< 1
Ethyl-t-butyl ether(ETBE)	< 2	< 2	< 2
Isopropyl ether(DIPE)	< 2	< 2	< 2
tert-amyl methyl ether(TAME)	< 2	< 2	< 2
trans-1,2-Dichloroethene	< 1	< 1	< 1
1,1-Dichloroethane	< 1	< 1	< 1
2,2-Dichloropropane	< 1	< 1	< 1
cis-1,2-Dichloroethene	< 1	< 1	< 1
2-Butanone(MEK)	< 10	< 10	< 10
Bromochloromethane	< 1	< 1	< 1
Tetrahydrofuran(THF)	< 10	< 10	< 10
Chloroform	< 1	< 1	< 1
1,1,1-Trichloroethane	< 1	< 1	< 1
Carbon tetrachloride	< 1	< 1	< 1
1,1-Dichloropropene	< 1	< 1	< 1
Benzene	< 1	< 1	< 1
1,2-Dichloroethane	< 1	< 1	< 1
Trichloroethene	< 1	< 1	< 1
1,2-Dichloropropane	< 1	< 1	< 1
Dibromomethane	< 1	< 1	< 1
Bromodichloromethane	< 0.5	< 0.5	< 0.5
1,4-Dioxane	< 50	< 50	< 50
4-Methyl-2-pentanone(MIBK)	< 10	< 10	< 10
cis-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5
Toluene	< 1	< 1	< 1
trans-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	< 1	< 1	< 1
2-Hexanone	< 10	< 10	< 10
Tetrachloroethene	< 1	< 1	< 1
1,3-Dichloropropane	< 1	< 1	< 1
Dibromochloromethane	< 1	< 1	< 1
1,2-Dibromoethane(EDB)	< 0.5	< 0.5	< 0.5
Chlorobenzene	< 1	< 1	< 1
1,1,1,2-Tetrachloroethane	< 1	< 1	< 1

LABORATORY REPORT

EAI ID#: **282449**

Client: **Sanborn, Head & Associates, Inc. (NH)**

Client Designation: **NCES | Groundwater SSI | 2637.11**

Sample ID:	B-932U_20240722	B-932L_20240722	SSI-TB-GW-01_20240722
Lab Sample ID:	282449.01	282449.02	282449.03
Matrix:	aqueous	aqueous	aqueous
Date Sampled:	7/22/24	7/22/24	7/22/24
Date Received:	7/23/24	7/23/24	7/23/24
Units:	ug/L	ug/L	ug/L
Date of Analysis:	7/25/24	7/25/24	7/25/24
Analyst:	DGM	DGM	DGM
Method:	8260C	8260C	8260C
Dilution Factor:	1	1	1
Ethylbenzene	< 1	< 1	< 1
mp-Xylene	< 1	< 1	< 1
o-Xylene	< 1	< 1	< 1
Styrene	< 1	< 1	< 1
Bromoform	< 2	< 2	< 2
IsoPropylbenzene	< 1	< 1	< 1
Bromobenzene	< 1	< 1	< 1
1,1,2,2-Tetrachloroethane	< 1	< 1	< 1
1,2,3-Trichloropropane	< 0.5	< 0.5	< 0.5
n-Propylbenzene	< 1	< 1	< 1
2-Chlorotoluene	< 1	< 1	< 1
4-Chlorotoluene	< 1	< 1	< 1
1,3,5-Trimethylbenzene	< 1	< 1	< 1
tert-Butylbenzene	< 1	< 1	< 1
1,2,4-Trimethylbenzene	< 1	< 1	< 1
sec-Butylbenzene	< 1	< 1	< 1
1,3-Dichlorobenzene	< 1	< 1	< 1
p-Isopropyltoluene	< 1	< 1	< 1
1,4-Dichlorobenzene	< 1	< 1	< 1
1,2-Dichlorobenzene	< 1	< 1	< 1
n-Butylbenzene	< 1	< 1	< 1
1,2-Dibromo-3-chloropropane	< 2	< 2	< 2
1,3,5-Trichlorobenzene	< 1	< 1	< 1
1,2,4-Trichlorobenzene	< 1	< 1	< 1
Hexachlorobutadiene	< 0.5	< 0.5	< 0.5
Naphthalene	< 2	< 2	< 2
1,2,3-Trichlorobenzene	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr)	**90 %R**	**91 %R**	**92 %R**
1,2-Dichlorobenzene-d4 (surr)	**106 %R**	**105 %R**	**106 %R**
Toluene-d8 (surr)	**99 %R**	**98 %R**	**99 %R**
1,2-Dichloroethane-d4 (surr)	**103 %R**	**104 %R**	**103 %R**

QC REPORT

EAI ID#: **282449**

Client: **Sanborn, Head & Associates, Inc. (NH)**

Batch ID: 638580-16632/A072524V82602

Client Designation: **NCES | Groundwater SSI | 2637.11**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Dichlorodifluoromethane	< 2	30 (148 %R)	28 (138 %R) (7 RPD)	7/25/2024	ug/L	40 - 160	20	8260C
Chloromethane	< 2	22 (108 %R)	21 (104 %R) (4 RPD)	7/25/2024	ug/L	40 - 160	20	8260C
Vinyl chloride	< 1	23 (116 %R)	22 (108 %R) (7 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Bromomethane	< 2	18 (90 %R)	17 (85 %R) (5 RPD)	7/25/2024	ug/L	40 - 160	20	8260C
Chloroethane	< 2	19 (97 %R)	19 (93 %R) (4 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Trichlorofluoromethane	< 2	23 (115 %R)	20 (101 %R) (13 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Diethyl Ether	< 2	18 (90 %R)	18 (88 %R) (1 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Acetone	< 10	19 (93 %R)	19 (95 %R) (2 RPD)	7/25/2024	ug/L	40 - 160	20	8260C
1,1-Dichloroethene	< 0.5	19 (95 %R)	18 (90 %R) (5 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
tert-Butyl Alcohol (TBA)	< 30	110 (106 %R)	110 (109 %R) (2 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Methylene chloride	< 1	19 (94 %R)	18 (91 %R) (3 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Carbon disulfide	< 2	18 (91 %R)	17 (87 %R) (5 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Methyl-t-butyl ether(MTBE)	< 1	18 (90 %R)	18 (89 %R) (1 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Ethyl-t-butyl ether(ETBE)	< 2	19 (95 %R)	18 (92 %R) (4 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Isopropyl ether(DIPE)	< 2	19 (97 %R)	18 (91 %R) (7 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
tert-amyl methyl ether(TAME)	< 2	18 (90 %R)	17 (87 %R) (4 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
trans-1,2-Dichloroethene	< 1	23 (117 %R)	22 (109 %R) (7 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,1-Dichloroethane	< 1	20 (102 %R)	19 (95 %R) (7 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
2,2-Dichloropropane	< 1	19 (95 %R)	18 (88 %R) (7 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
cis-1,2-Dichloroethene	< 1	19 (97 %R)	19 (93 %R) (5 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
2-Butanone(MEK)	< 10	20 (101 %R)	19 (96 %R) (5 RPD)	7/25/2024	ug/L	40 - 160	20	8260C
Bromochloromethane	< 1	20 (101 %R)	19 (97 %R) (3 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Tetrahydrofuran(THF)	< 10	19 (97 %R)	19 (97 %R) (0 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Chloroform	< 1	20 (101 %R)	19 (95 %R) (6 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,1,1-Trichloroethane	< 1	20 (99 %R)	19 (93 %R) (6 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Carbon tetrachloride	< 1	20 (100 %R)	19 (94 %R) (7 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,1-Dichloropropene	< 1	21 (103 %R)	20 (98 %R) (6 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Benzene	< 1	21 (103 %R)	19 (96 %R) (6 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,2-Dichloroethane	< 1	20 (101 %R)	19 (96 %R) (5 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Trichloroethene	< 1	20 (101 %R)	19 (95 %R) (6 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,2-Dichloropropane	< 1	20 (100 %R)	19 (95 %R) (5 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Dibromomethane	< 1	20 (99 %R)	19 (96 %R) (3 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Bromodichloromethane	< 0.5	19 (94 %R)	18 (89 %R) (5 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,4-Dioxane	< 50	< 50 (120 %R)	< 50 (123 %R) (2 RPD)	7/25/2024	ug/L	40 - 160	20	8260C
4-Methyl-2-pentanone(MIBK)	< 10	20 (99 %R)	19 (96 %R) (3 RPD)	7/25/2024	ug/L	40 - 160	20	8260C
cis-1,3-Dichloropropene	< 0.5	19 (94 %R)	18 (90 %R) (4 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Toluene	< 1	21 (105 %R)	20 (99 %R) (5 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
trans-1,3-Dichloropropene	< 0.5	21 (104 %R)	20 (100 %R) (4 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,1,2-Trichloroethane	< 1	20 (102 %R)	20 (100 %R) (2 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
2-Hexanone	< 10	19 (94 %R)	18 (89 %R) (5 RPD)	7/25/2024	ug/L	40 - 160	20	8260C
Tetrachloroethene	< 1	21 (103 %R)	20 (98 %R) (5 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,3-Dichloropropane	< 1	20 (100 %R)	19 (97 %R) (3 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Dibromochloromethane	< 1	20 (98 %R)	19 (95 %R) (3 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,2-Dibromoethane(EDB)	< 0.5	20 (101 %R)	20 (98 %R) (3 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Chlorobenzene	< 1	21 (104 %R)	20 (99 %R) (5 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,1,1,2-Tetrachloroethane	< 1	20 (101 %R)	19 (96 %R) (4 RPD)	7/25/2024	ug/L	70 - 130	20	8260C

QC REPORT

EAI ID#: **282449**

Client: **Sanborn, Head & Associates, Inc. (NH)** **Batch ID:** 638580-16632/A072524V82602

Client Designation: **NCES | Groundwater SSI | 2637.11**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Ethylbenzene	< 1	21 (106 %R)	20 (100 %R) (5 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
mp-Xylene	< 1	43 (107 %R)	41 (101 %R) (6 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
o-Xylene	< 1	21 (104 %R)	20 (99 %R) (6 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Styrene	< 1	16 (81 %R)	14 (71 %R) (13 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Bromoform	< 2	22 (111 %R)	22 (108 %R) (3 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
IsoPropylbenzene	< 1	19 (96 %R)	18 (90 %R) (6 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Bromobenzene	< 1	21 (103 %R)	20 (100 %R) (3 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,1,2,2-Tetrachloroethane	< 1	21 (104 %R)	21 (104 %R) (0 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,2,3-Trichloropropane	< 0.5	20 (102 %R)	20 (102 %R) (0 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
n-Propylbenzene	< 1	22 (110 %R)	21 (105 %R) (4 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
2-Chlorotoluene	< 1	22 (108 %R)	21 (103 %R) (5 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
4-Chlorotoluene	< 1	22 (108 %R)	21 (105 %R) (3 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,3,5-Trimethylbenzene	< 1	21 (106 %R)	21 (103 %R) (4 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
tert-Butylbenzene	< 1	21 (106 %R)	20 (102 %R) (4 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,2,4-Trimethylbenzene	< 1	21 (107 %R)	20 (102 %R) (4 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
sec-Butylbenzene	< 1	23 (115 %R)	22 (110 %R) (4 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,3-Dichlorobenzene	< 1	21 (104 %R)	20 (101 %R) (3 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
p-Isopropyltoluene	< 1	22 (111 %R)	24 (119 %R) (6 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,4-Dichlorobenzene	< 1	20 (102 %R)	20 (99 %R) (2 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,2-Dichlorobenzene	< 1	20 (102 %R)	20 (100 %R) (3 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
n-Butylbenzene	< 1	22 (112 %R)	22 (108 %R) (4 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,2-Dibromo-3-chloropropane	< 2	21 (105 %R)	21 (106 %R) (0 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,3,5-Trichlorobenzene	< 1	21 (106 %R)	20 (102 %R) (3 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,2,4-Trichlorobenzene	< 1	20 (100 %R)	20 (99 %R) (1 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Hexachlorobutadiene	< 0.5	20 (102 %R)	20 (99 %R) (3 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
Naphthalene	< 2	21 (105 %R)	21 (105 %R) (0 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
1,2,3-Trichlorobenzene	< 0.5	21 (107 %R)	21 (105 %R) (1 RPD)	7/25/2024	ug/L	70 - 130	20	8260C
4-Bromofluorobenzene (surr)	88 %R	99 %R	100 %R	7/25/2024	% Rec	70 - 130		8260C
1,2-Dichlorobenzene-d4 (surr)	109 %R	100 %R	100 %R	7/25/2024	% Rec	70 - 130		8260C
Toluene-d8 (surr)	102 %R	103 %R	102 %R	7/25/2024	% Rec	70 - 130		8260C
1,2-Dichloroethane-d4 (surr)	102 %R	98 %R	98 %R	7/25/2024	% Rec	70 - 130		8260C

*/! Flagged analyte recoveries deviated from the QA/QC limits. Data that impacts sample results are noted on the sample report.

LABORATORY REPORT

EAI ID#: **282449**

Client: **Sanborn, Head & Associates, Inc. (NH)**

Client Designation: **NCES | Groundwater SSI | 2637.11**

Sample ID:	B-932U_20240722	B-932L_20240722	SSI-TB-LL-GW -01_20240722
Lab Sample ID:	282449.01	282449.02	282449.04
Matrix:	aqueous	aqueous	aqueous
Date Sampled:	7/22/24	7/22/24	7/22/24
Date Received:	7/23/24	7/23/24	7/23/24
Units:	ug/L	ug/L	ug/L
Date of Analysis:	7/26/24	7/26/24	7/26/24
Analyst:	AMF	AMF	AMF
Method:	8260B SIM	8260B SIM	8260B SIM
Dilution Factor:	1	1	1
1,4-Dioxane	< 0.25	< 0.25	< 0.25
4-Bromofluorobenzene (surr)	**98 %R**	**98 %R**	**97 %R**
Toluene-d8 (surr)	**98 %R**	**99 %R**	**99 %R**

QC REPORT

EAI ID#: **282449**

Client: **Sanborn, Head & Associates, Inc. (NH)**

Batch ID: 638576-06518/A072624DIOX1

Client Designation: **NCES | Groundwater SSI | 2637.11**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
1,4-Dioxane	< 0.2	4.4 (87 %R)	4.6 (92 %R) (6 RPD)	7/26/2024	ug/L	70 - 130	20	8260B
4-Bromofluorobenzene (surr)	98 %R	98 %R	99 %R	7/26/2024	% Rec	70 - 130		8260B
Toluene-d8 (surr)	98 %R	98 %R	99 %R	7/26/2024	% Rec	70 - 130		8260B

*/! Flagged analyte recoveries deviated from the QA/QC limits. Data that impacts sample results are noted on the sample report.

LABORATORY REPORT

EAI ID#: **282449**

Client: **Sanborn, Head & Associates, Inc. (NH)**

Client Designation: **NCES | Groundwater SSI | 2637.11**

Sample ID:	B-932U_20240722	B-932L_20240722
Lab Sample ID:	282449.01	282449.02
Matrix:	aqueous	aqueous
Date Sampled:	7/22/24	7/22/24
Date Received:	7/23/24	7/23/24

			Analysis			
			Units	Date	Time	Method	Analyst
Bromide	< 0.1	< 0.1	mg/L	7/25/24	19:09	300.0	SEC
Sulfate	**13**	**9.1**	mg/L	7/25/24	19:09	300.0	SEC
Chloride	**6**	**3.5**	mg/L	7/23/24	14:28	4500CIE-11	ALS
Nitrate-N	< 0.5	< 0.5	mg/L	7/23/24	14:28	353.2	ALS
TKN	< 0.5	< 0.5	mg/L	7/25/24	19:11	4500N_{org}C/NH3D	GRS
COD	< 10	< 10	mg/L	7/25/24	14:30	H8000	JCS

QC REPORT

EAI ID#: **282449**

Client: **Sanborn, Head & Associates, Inc. (NH)**

Client Designation: **NCES | Groundwater SSI | 2637.11**

Parameter Name	Blank	LCS	LCSD	Units	Date of Analysis	Limits	RPD	Method
Bromide	< 0.1	1.9 (97 %R)	1.9 (94 %R) (3 RPD)	mg/L	7/26/24	90 - 110	20	300.0
Sulfate	< 1	20 (100 %R)	19 (97 %R) (3 RPD)	mg/L	7/25/24	90 - 110	20	300.0
Chloride	< 1	26 (104 %R)	26 (104 %R) (0 RPD)	mg/L	7/23/24	90 - 110	20	4500CIE-11
Nitrate-N	< 0.5	5.2 (105 %R)	4.9 (99 %R) (6 RPD)	mg/L	7/23/24	90 - 110	20	353.2
TKN	< 0.5	10 (100 %R)	10 (100 %R) (1 RPD)	mg/L	7/25/24	90 - 111	20	4500N_{org}C/NH3D-11
COD	< 10	97 (97 %R)	95 (95 %R) (2 RPD)	mg/L	7/25/24	85 - 115	20	H8000

*/! Flagged analyte recoveries deviated from the QA/QC limits. Unless noted, flagged data does not impact the sample data.

LABORATORY REPORT

EAI ID#: **282449**

Client: **Sanborn, Head & Associates, Inc. (NH)**

Client Designation: **NCES | Groundwater SSI | 2637.11**

Sample ID:	B-932U_20240722	B-932L_20240722					
Lab Sample ID:	282449.01	282449.02					
Matrix:	aqueous	aqueous					
Date Sampled:	7/22/24	7/22/24					
Date Received:	7/23/24	7/23/24	**Analytical Matrix**	**Units**	**Date of Analysis**	**Method**	**Analyst**
Antimony	< 0.001	< 0.001	AqDis	mg/L	7/24/24	200.8	DS
Arsenic	< 0.0005	**0.0015**	AqDis	mg/L	7/24/24	200.8	DS
Barium	**0.0099**	**0.0083**	AqDis	mg/L	7/24/24	200.8	DS
Beryllium	< 0.001	< 0.001	AqDis	mg/L	7/24/24	200.8	DS
Cadmium	< 0.001	< 0.001	AqDis	mg/L	7/24/24	200.8	DS
Chromium	< 0.001	**0.0014**	AqDis	mg/L	7/24/24	200.8	DS
Iron	< 0.05	< 0.05	AqDis	mg/L	7/24/24	200.8	DS
Lead	< 0.001	< 0.001	AqDis	mg/L	7/24/24	200.8	DS
Manganese	**0.081**	**0.019**	AqDis	mg/L	7/24/24	200.8	DS
Nickel	< 0.001	< 0.001	AqDis	mg/L	7/24/24	200.8	DS
Silver	< 0.001	< 0.001	AqDis	mg/L	7/24/24	200.8	DS
Thallium	< 0.001	< 0.001	AqDis	mg/L	7/24/24	200.8	DS

QC REPORT

EAI ID#: **282449**

Client: **Sanborn, Head & Associates, Inc. (NH)**

Client Designation: **NCES | Groundwater SSI | 2637.11**

Parameter Name	Blank	LCS	LCSD		Units	Date of Analysis	Limits	RPD	Method
Antimony	< 0.001	0.21 (105 %R)		NA	mg/L	7/25/24	85 - 115	20	200.8
Arsenic	< 0.0005	0.21 (103 %R)		NA	mg/L	7/25/24	85 - 115	20	200.8
Barium	< 0.001	0.21 (106 %R)		NA	mg/L	7/25/24	85 - 115	20	200.8
Beryllium	< 0.001	0.22 (109 %R)		NA	mg/L	7/25/24	85 - 115	20	200.8
Cadmium	< 0.001	0.20 (98 %R)		NA	mg/L	7/25/24	85 - 115	20	200.8
Chromium	< 0.001	0.20 (101 %R)		NA	mg/L	7/25/24	85 - 115	20	200.8
Iron	< 0.05	10 (104 %R)		NA	mg/L	7/25/24	85 - 115	20	200.8
Lead	< 0.001	0.20 (98 %R)		NA	mg/L	7/25/24	85 - 115	20	200.8
Manganese	< 0.005	0.20 (102 %R)		NA	mg/L	7/25/24	85 - 115	20	200.8
Nickel	< 0.001	0.20 (101 %R)		NA	mg/L	7/25/24	85 - 115	20	200.8
Silver	< 0.001	0.0098 (98 %R)		NA	mg/L	7/25/24	85 - 115	20	200.8
Thallium	< 0.001	0.20 (102 %R)		NA	mg/L	7/25/24	85 - 115	20	200.8

*/! Flagged analyte recoveries deviated from the QA/QC limits. Unless noted, flagged data does not impact the sample data.

Page 1 of 1

Chain-of-Custody Record

For 282449

Sample ID	Sampling Date/Time *If Composite, Indicate Both Start & Finish Date/Time	Matrix (see below)	Grab/*Composite	VOCs 8260C	Low Level 1,4-Dioxane	TKN, COD	Bromide, Chloride, Nitrate	Dissolved Metals List A	Sulfate	# of Containers	NOTES MeOH Vial #
B-932U_20240722	7/22/24 1030	GW	G	X	X	X	X	X	X	7	
B-932L_20240722	7/22/24 1019	GW	G	X	X	X	X	X	X	7	
SSI-TB-GW-01_20240722	7/22/24 1045	AQ	-	X						2	
SSI-TB-LL-GW-01_20240722	7/22/24 1045	AQ	-		X					2	
Matrix: A-Air; S-Soil; GW-Ground Water; SW-Surface Water; DW-Drining Water; WW-Waste Water; AQ-Aqueous Preservative: H-HCl; N-HNO3; S-H2SO4; Na-NaOH; M-MeOH; NSO-Na2S2O3				H	Ice	S	Ice	N	Ice		

Analyses Requested

Project Manager: M. Estabrooks / T. White
Company: Sanborn, Head & Associates, Inc.
Address: 6 Bedford Farms Drive, Suite 201
City: Bedford State: NH Zip: 03110
Phone 603-229-1900 Ext.:
Fax: 603-229-1919
E-Mail: mestabrooks@sanbornhead.com
Site Name: NCES | Groundwater SSI
Project # 2637.11
State: NH

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

Quote #: PO#:

Date Needed: Standard TAT

Temp. 3.2 °C
Ice? (Yes) No

QA/QC
Reporting Level
A [B] C
or
Presumptive Certainty

Reporting Options
Prelims: [Yes] or No
If Yes: Fax or [PDF]

Electonic Options
[No Fax] [E-Mail] [PDF] [Equis]

Metals: Lists Below **Samples Field Filtered:** YES
A: Fe, Mn, As, Ba, Cd, Cr, Pb, Sb, Be, Ni, Ag, Tl
B:
C:

Notes: (i.e., Special Detection Limits, Billing Info, If Different)
Trip blank(s) prepared by EAI.
Bill NCES.
*Report 1,4-dioxane to 0.25 ug/l RL
*Hold Final report until EQuIS EDD ready.

Sampler(s): MTS

Relinquished By:	Date:	Time:	Received By:
[signature]	7/22/24	1945	
[signature]	7/23/24	0800	[signature]

Site History:
Suspected Contamination:
Field Readings:

Eastern Analytical, Inc.
Professional laboratory & drilling services
51 Antrim Ave | Concord, NH 03301 | Tel: 603.228.0525 | 1.800.287.0525 | Fax: 603.228.4591 | E-Mail: customerservice@eailabs.com | www.eailabs.com

Eastern Analytical, Inc.

professional laboratory and drilling services

Matt Estabrooks
Sanborn, Head & Associates, Inc. (NH)
6 Bedford Farms Drive, Suite 201
Bedford , NH 03110

Subject: Laboratory Report

Eastern Analytical, Inc. ID: 282540
Client Identification: NCES | PFAS GW SSI | 2637.11
Date Received: 7/24/2024

Dear Mr. Estabrooks :

Enclosed please find the report of analysis for the above identified project. As discussed, analyses were subcontracted and are listed as follows:

Analysis:	Subcontract - PFAS EPA Method 537mod
Subcontractor Lab:	Enthalpy Analytical

A complete copy of the report is attached. This report may not be reproduced except in full, without the written approval of the laboratory.

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

Sincerely,

Lorraine Olashaw, Lab Director — Date: 8.9.24

SAMPLE CONDITIONS PAGE

EAI ID#: **282540**

Client: **Sanborn, Head & Associates, Inc. (NH)**

Client Designation: **NCES | PFAS GW SSI | 2637.11**

Temperature upon receipt (°C): 1.4 **Received on ice or cold packs (Yes/No): Y**

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date/Time Sampled		Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
282540.01	B-932U_20240722	7/24/24	7/22/24	10:30	aqueous		Adheres to Sample Acceptance Policy
282540.02	B-932L_20240722	7/24/24	7/22/24	10:19	aqueous		Adheres to Sample Acceptance Policy

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

Unless otherwise noted:

- *Hold times, preservation, container types, and sample conditions adhered to EPA Protocol.*
- *Solid samples are reported on a dry weight basis, unless otherwise noted. pH/Corrosivity, Flashpoint, Ignitability, Paint Filter, Conductivity and Specific Gravity are always reported on an "as received" basis.*
- *Analysis of pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite were performed at the laboratory outside of the recommended 15 minute hold time.*
- *Samples collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures.*

August 07, 2024

Enthalpy Analytical - El Dorado Hills
Work Order No. 2407240

Ms. Alison Blay
Eastern Analytical, Inc.
51 Antrim Avenue
Concord, NH 03301

Dear Ms. Blay,

Enclosed are the results for the sample set received at Enthalpy Analytical - EDH on July 26, 2024 under your Project Name '282540 NH 2920'.

Enthalpy Analytical - EDH is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at rajwinder.kaur@enthalpy.com.

Thank you for choosing Enthalpy Analytical - EDH as part of your analytical support team.

Sincerely,

Rajwinder Kaur
Project Manager

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

Enthalpy Analytical - EDH Work Order No. 2407240
Case Narrative

Sample Condition on Receipt:

Two aqueous samples were received and stored securely in accordance with Enthalpy Analytical - EDH standard operating procedures and EPA methodology. The samples were received in good condition and within the method temperature requirements. Sample ID discrepancies were noted for the samples between the container labels and the Chain-of-Custody (CoC). The sample IDs have been reported as listed on the CoC.

Analytical Notes:

PFAS Isotope Dilution/LC-MSMS Method Compliant with Table B-15 of DoD QSM 5.4 (Aqueous)

Samples "B-932U_20240722" and "B-932L_20240722" contained particulate and were centrifuged prior to extraction.

The samples were extracted and analyzed for a selected list of PFAS using Isotope Dilution and LC-MS/MS compliant with Table B-15 of DoD QSM 5.4. The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The samples were extracted and analyzed within the hold times.

Quality Control

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

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above 1/2 the Reporting Limits (RL). The OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries outside the acceptance criteria are flagged with an "H" qualifier. The responses of the internal standards with low recoveries were greater than 10:1 signal-to-noise, which is the limit generally considered acceptable for accurate quantitation by isotope dilution analysis.

TABLE OF CONTENTS

ENTHALPY ANALYTICAL

Sample Inventory Report

Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2407240-01	B-932U_20240722	22-Jul-24 10:30	26-Jul-24 11:11	Polypropylene, 250mL
				Polypropylene, 250mL
2407240-02	B-932L_20240722	22-Jul-24 10:19	26-Jul-24 11:11	Polypropylene, 250mL
				Polypropylene, 250mL

ANALYTICAL RESULTS

ENTHALPY ANALYTICAL

Sample ID: Method Blank — **PFAS Isotope Dilution Table B-15**

Client Data
Name: Eastern Analytical, Inc. Matrix: Aqueous
Project: 282540 NH 2920

Laboratory Data
Lab Sample: B24G251-BLK1 Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
PFPeA	2706-90-3	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
PFBS	375-73-5	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
4:2 FTS	757124-72-4	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
PFHxA	307-24-4	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
PFPeS	2706-91-4	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
PFHpA	375-85-9	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
PFHxS	355-46-4	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
6:2 FTS	27619-97-2	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
PFOA	335-67-1	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
PFHpS	375-92-8	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
PFNA	375-95-1	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
PFOSA	754-91-6	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
PFOS	1763-23-1	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
PFDA	335-76-2	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
8:2 FTS	39108-34-4	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
PFNS	68259-12-1	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
MeFOSAA	2355-31-9	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
EtFOSAA	2991-50-6	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
PFUnA	2058-94-8	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
PFDS	335-77-3	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
PFDoA	307-55-1	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
MeFOSA	31506-32-8	ND	4.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
PFTrDA	72629-94-8	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
PFTeDA	376-06-7	ND	2.00		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	82.2	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
13C3-PFPeA	IS	80.2	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
13C3-PFBS	IS	85.1	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
13C2-4:2 FTS	IS	83.8	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
13C2-PFHxA	IS	82.1	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
13C4-PFHpA	IS	78.3	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
13C3-PFHxS	IS	79.4	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
13C2-6:2 FTS	IS	64.3	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
13C2-PFOA	IS	74.9	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
13C5-PFNA	IS	75.0	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
13C8-PFOSA	IS	38.9	50 - 150	H	B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
13C8-PFOS	IS	84.3	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1

ENTHALPY ANALYTICAL

Sample ID: Method Blank — **PFAS Isotope Dilution Table B-15**

Client Data				Laboratory Data			
Name:	Eastern Analytical, Inc.	Matrix:	Aqueous	Lab Sample:	B24G251-BLK1	Column:	BEH C18
Project:	282540 NH 2920						

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDA	IS	74.3	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
13C2-8:2 FTS	IS	74.4	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
d3-MeFOSAA	IS	60.9	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
d5-EtFOSAA	IS	61.3	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
13C2-PFUnA	IS	68.3	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
13C2-PFDoA	IS	52.2	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
d3-MeFOSA	IS	19.5	50 - 150	H	B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1
13C2-PFTeDA	IS	29.1	50 - 150	H	B24G251	31-Jul-24	0.250 L	01-Aug-24 21:10	1

RL - Reporting limit

Results reported to RL.

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

ENTHALPY ANALYTICAL

Sample ID: OPR — **PFAS Isotope Dilution Table B-15**

Client Data

Name: Eastern Analytical, Inc. Matrix: Aqueous
Project: 282540 NH 2920

Laboratory Data

Lab Sample: B24G251-BS1 Column: BEH C18

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	37.6	40.0	94.1	73 - 129		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
PFPeA	2706-90-3	37.7	40.0	94.3	72 - 129		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
PFBS	375-73-5	38.4	40.0	96.1	72 - 130		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
4:2 FTS	757124-72-4	40.2	40.0	100	63 - 143		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
PFHxA	307-24-4	39.2	40.0	97.9	72 - 129		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
PFPeS	2706-91-4	41.1	40.0	103	71 - 127		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
PFHpA	375-85-9	41.5	40.0	104	72 - 130		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
PFHxS	355-46-4	32.3	40.0	80.8	68 - 131		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
6:2 FTS	27619-97-2	43.2	40.0	108	64 - 140		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
PFOA	335-67-1	36.8	40.0	91.9	71 - 133		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
PFHpS	375-92-8	42.3	40.0	106	69 - 134		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
PFNA	375-95-1	34.0	40.0	85.0	69 - 130		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
PFOSA	754-91-6	43.7	40.0	109	67 - 137		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
PFOS	1763-23-1	40.6	40.0	102	65 - 140		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
PFDA	335-76-2	42.0	40.0	105	71 - 129		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
8:2 FTS	39108-34-4	45.4	40.0	114	67 - 138		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
PFNS	68259-12-1	42.2	40.0	106	69 - 127		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
MeFOSAA	2355-31-9	42.1	40.0	105	65 - 136		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
EtFOSAA	2991-50-6	37.0	40.0	92.6	61 - 135		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
PFUnA	2058-94-8	38.4	40.0	96.0	69 - 133		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
PFDS	335-77-3	47.3	40.0	118	53 - 142		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
PFDoA	307-55-1	38.1	40.0	95.4	72 - 134		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
MeFOSA	31506-32-8	41.1	40.0	103	68 - 141		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
PFTrDA	72629-94-8	34.6	40.0	86.6	65 - 144		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
PFTeDA	376-06-7	37.5	40.0	93.8	71 - 132		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	81.5	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
13C3-PFPeA	IS	82.8	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
13C3-PFBS	IS	76.7	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
13C2-4:2 FTS	IS	79.4	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
13C2-PFHxA	IS	80.8	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
13C4-PFHpA	IS	73.8	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
13C3-PFHxS	IS	86.8	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
13C2-6:2 FTS	IS	65.2	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
13C2-PFOA	IS	77.8	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1

ENTHALPY ANALYTICAL

Sample ID: OPR

PFAS Isotope Dilution Table B-15

Client Data

Name: Eastern Analytical, Inc.
Project: 282540 NH 2920
Matrix: Aqueous

Laboratory Data

Lab Sample: B24G251-BS1
Column: BEH C18

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	84.0	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
13C8-PFOSA	IS	37.9	50 - 150	H	B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
13C8-PFOS	IS	75.4	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
13C2-PFDA	IS	74.4	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
13C2-8:2 FTS	IS	65.2	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
d3-MeFOSAA	IS	68.5	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
d5-EtFOSAA	IS	68.1	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
13C2-PFUnA	IS	78.0	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
13C2-PFDoA	IS	66.7	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
d3-MeFOSA	IS	22.9	50 - 150	H	B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1
13C2-PFTeDA	IS	55.4	50 - 150		B24G251	31-Jul-24	0.250 L	01-Aug-24 21:20	1

ENTHALPY ANALYTICAL

Sample ID: B-932U_20240722 **PFAS Isotope Dilution Table B-15**

Client Data				Laboratory Data			
Name:	Eastern Analytical, Inc.	Matrix:	Aqueous	Lab Sample:	2407240-01	Column:	BEH C18
Project:	282540 NH 2920	Date Collected:	22-Jul-24 10:30	Date Received:	26-Jul-24 11:11		
Location:	282540						

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
PFPeA	2706-90-3	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
PFBS	375-73-5	2.98	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
4:2 FTS	757124-72-4	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
PFHxA	307-24-4	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
PFPeS	2706-91-4	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
PFHpA	375-85-9	2.27	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
PFHxS	355-46-4	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
6:2 FTS	27619-97-2	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
PFOA	335-67-1	5.30	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
PFHpS	375-92-8	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
PFNA	375-95-1	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
PFOSA	754-91-6	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
PFOS	1763-23-1	2.30	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
PFDA	335-76-2	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
8:2 FTS	39108-34-4	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
PFNS	68259-12-1	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
MeFOSAA	2355-31-9	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
EtFOSAA	2991-50-6	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
PFUnA	2058-94-8	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
PFDS	335-77-3	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
PFDoA	307-55-1	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
MeFOSA	31506-32-8	ND	3.98		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
PFTrDA	72629-94-8	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
PFTeDA	376-06-7	ND	1.99		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	81.9	50 - 150		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
13C3-PFPeA	IS	84.3	50 - 150		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
13C3-PFBS	IS	78.2	50 - 150		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
13C2-4:2 FTS	IS	76.8	50 - 150		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
13C2-PFHxA	IS	83.9	50 - 150		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
13C4-PFHpA	IS	82.0	50 - 150		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
13C3-PFHxS	IS	77.4	50 - 150		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
13C2-6:2 FTS	IS	69.4	50 - 150		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
13C2-PFOA	IS	79.4	50 - 150		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
13C5-PFNA	IS	79.5	50 - 150		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
13C8-PFOSA	IS	52.1	50 - 150		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1

ENTHALPY ANALYTICAL

Sample ID: B-932U_20240722 **PFAS Isotope Dilution Table B-15**

Client Data				Laboratory Data			
Name:	Eastern Analytical, Inc.	Matrix:	Aqueous	Lab Sample:	2407240-01	Column:	BEH C18
Project:	282540 NH 2920	Date Collected:	22-Jul-24 10:30	Date Received:	26-Jul-24 11:11		
Location:	282540						

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C8-PFOS	IS	81.7	50 - 150		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
13C2-PFDA	IS	70.1	50 - 150		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
13C2-8:2 FTS	IS	70.7	50 - 150		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
d3-MeFOSAA	IS	71.6	50 - 150		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
d5-EtFOSAA	IS	70.6	50 - 150		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
13C2-PFUnA	IS	68.5	50 - 150		B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
13C2-PFDoA	IS	49.7	50 - 150	H	B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
d3-MeFOSA	IS	22.3	50 - 150	H	B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1
13C2-PFTeDA	IS	20.5	50 - 150	H	B24G251	31-Jul-24	0.251 L	01-Aug-24 22:43	1

RL - Reporting limit

Results reported to RL.

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

ENTHALPY ANALYTICAL

Sample ID: B-932L_20240722 **PFAS Isotope Dilution Table B-15**

Client Data				Laboratory Data			
Name:	Eastern Analytical, Inc.	Matrix:	Aqueous	Lab Sample:	2407240-02	Column:	BEH C18
Project:	282540 NH 2920	Date Collected:	22-Jul-24 10:19	Date Received:	26-Jul-24 11:11		
Location:	282540						

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
PFPeA	2706-90-3	1.98	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
PFBS	375-73-5	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
4:2 FTS	757124-72-4	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
PFHxA	307-24-4	2.46	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
PFPeS	2706-91-4	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
PFHpA	375-85-9	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
PFHxS	355-46-4	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
6:2 FTS	27619-97-2	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
PFOA	335-67-1	2.48	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
PFHpS	375-92-8	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
PFNA	375-95-1	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
PFOSA	754-91-6	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
PFOS	1763-23-1	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
PFDA	335-76-2	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
8:2 FTS	39108-34-4	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
PFNS	68259-12-1	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
MeFOSAA	2355-31-9	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
EtFOSAA	2991-50-6	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
PFUnA	2058-94-8	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
PFDS	335-77-3	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
PFDoA	307-55-1	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
MeFOSA	31506-32-8	ND	3.91		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
PFTrDA	72629-94-8	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
PFTeDA	376-06-7	ND	1.95		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	86.1	50 - 150		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
13C3-PFPeA	IS	87.4	50 - 150		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
13C3-PFBS	IS	90.4	50 - 150		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
13C2-4:2 FTS	IS	83.8	50 - 150		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
13C2-PFHxA	IS	87.9	50 - 150		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
13C4-PFHpA	IS	84.7	50 - 150		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
13C3-PFHxS	IS	80.3	50 - 150		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
13C2-6:2 FTS	IS	76.7	50 - 150		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
13C2-PFOA	IS	82.8	50 - 150		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
13C5-PFNA	IS	88.3	50 - 150		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
13C8-PFOSA	IS	57.2	50 - 150		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1

ENTHALPY ANALYTICAL

Sample ID: B-932L_20240722 — **PFAS Isotope Dilution Table B-15**

Client Data				Laboratory Data			
Name:	Eastern Analytical, Inc.	Matrix:	Aqueous	Lab Sample:	2407240-02	Column:	BEH C18
Project:	282540 NH 2920	Date Collected:	22-Jul-24 10:19	Date Received:	26-Jul-24 11:11		
Location:	282540						

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C8-PFOS	IS	87.9	50 - 150		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
13C2-PFDA	IS	81.0	50 - 150		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
13C2-8:2 FTS	IS	80.9	50 - 150		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
d3-MeFOSAA	IS	79.3	50 - 150		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
d5-EtFOSAA	IS	74.7	50 - 150		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
13C2-PFUnA	IS	79.9	50 - 150		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
13C2-PFDoA	IS	66.3	50 - 150		B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
d3-MeFOSA	IS	23.8	50 - 150	H	B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1
13C2-PFTeDA	IS	39.9	50 - 150	H	B24G251	31-Jul-24	0.256 L	01-Aug-24 22:54	1

RL - Reporting limit

Results reported to RL.

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

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
CRS	Cleanup Recovery Standard
D	Dilution
DL	Detection Limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
MDL	Method Detection Limit
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
RL	For 537.1, the reported RLs are the MRLs.
TEQ	Toxic Equivalency, sum of the toxic equivalency factors (TEF) multiplied by the sample concentrations.
TEQMax	TEQ calculation that uses the detection limit as the concentration for non-detects
TEQMin	TEQ calculation that uses zero as the concentration for non-detects
TEQRisk	TEQ calculation that uses ½ the detection limit as the concentration for non-detects
U	Not Detected (specific projects only)
*	See Cover Letter

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

Enthalpy Analytical - EDH Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	21-023-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2020018
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	2211390
Nevada Division of Environmental Protection	CA00413
New Hampshire Environmental Accreditation Program	207721
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Ohio Environmental Protection Agency	87778
Oregon Laboratory Accreditation Program	4042-021
Texas Commission on Environmental Quality	T104704189-22-13
Vermont Department of Health	VT-4042
Virginia Department of General Services	11276
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters can be found at Enthalpy.com/Resources/Accreditations.

CHAIN-OF-CUSTODY RECORD

Eastern Analytical, Inc.
professional laboratory and drilling services

EAI ID# **282540** Page 1

Sample ID	Date Sampled	Matrix	aParameters 2407240 5°C	Sample Notes
B-932U_20240722	7/22/2024 10:30	aqueous	Subcontract - Perfluorinated Compounds EPA Method 537 modified	
B-932L_20240722	7/22/2024 10:19	aqueous	Subcontract - Perfluorinated Compounds EPA Method 537 modified	

EAI ID# **282540** Project State: NH
Project ID: 2920

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

Results Needed: Preferred Date: Standard
RUSH Due Date: _____

QC Deliverables
☐ A ☐ A+ ☒ B ☐ B+ ☐ C ☐ MA MCP

Notes about project:
Email login confirmation, pdf of results and invoice to customerservice@easternanalytical.com.

1) Centrifuge samples if needed
2) Please Report Sulfonic Acids
3) PFAS by Method 537 Mod with isotope dilution (Compound List attached))
4) Report to RL (no J-flags)

PO #: US0543807228 EAI ID# **282540**

Data Deliverable (circle)
Excel NH EMD EQuIS ME EGA

Call prior to analyzing, if RUSH charges will be applied.

Samples Collected by: _____

Relinquished by	Date/Time	Received by
[signature]	7/25/24 1600	UPS
UPS	07/26/24 11:11	[signature]
Relinquished by	Date/Time	Received by

Eastern Analytical, Inc. 51 Antrim Ave Concord, NH 03301 Phone: (603)228-0525 1-800-287-0525 customerservice@easternanalytical.com

2407240 CAI # 282540

PFAS DoD 25 Compounds

Analyte Name	CAS #	Analyte
4:2 Fluorotelomer sulfonate	757124-72-4	4:2-FTS
6:2 Fluorotelomer sulfonate	27619-97-2	6:2-FTS
8:2 Fluorotelomer sulfonate	39108-34-4	8:2-FTS
N-ethyl perfluorooctanesulfonamidoacetic acid	2991-50-6	NEtFOSAA
N-methyl perfluorooctanesulfonamidoacetic acid	2355-31-9	NMeFOSAA
Perfluorooctanesulfonic acid	1763-23-1	PFOS
Perfluorobutanesulfonic acid	375-73-5	PFBS
Perfluorobutanoic acid	375-22-4	PFBA
Perfluorodecanesulfonic acid	335-77-3	PFDS
Perfluorodecanoic acid	335-76-2	PFDA
Perfluorododecanoic acid	307-55-1	PFDoA
Perfluoroheptanesulfonic acid	375-92-8	PFHpS
Perfluoroheptanoic acid	375-85-9	PFHpA
Perfluorohexanesulfonoic acid	355-46-4	PFHxS
Perfluorohexanoic acid	307-24-4	PFHxA
Perfluorononane sulfonic acid	68259-12-1	PFNS
Perfluorononaoic acid	375-95-1	PFNA
Perfluorooctanoic acid	335-67-1	PFOA
Perfluoropentane sulfonic acid	2706-91-4	PFPeS
Perfluoropentanoic acid	2706-90-3	PFPeA
Perfluorotetradecanoic acid	376-06-7	PFTeDA
Perfluorotridecanoic acid	72629-94-8	PFTrDA
Perfluoroundecanoic acid	2058-94-8	PFUnA/PFUdA
N-methylperfluorooctanesulfonamide	31506-32-8	N-MeFOSA
Perfluorooctanesulfonamide	754-91-6	PFOSA

Sample Log-In Checklist

ENTHALPY ANALYTICAL

Page # 1 of ____

Work Order #: 2407240 TAT Std

Samples Arrival:	Date/Time 07/26/24 11:11		Initials: KG		Location: WR-2 Shelf/Rack: RM		
Delivered By:	FedEx	(UPS)	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	(Ice)		Blue Ice		Techni Ice	Dry Ice	None
Temp °C: 5.8 (uncorrected)		Probe used: Y / (N)			Thermometer ID: IR-4		
Temp °C: 5.8 (corrected)							

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?			✓
Airbill 1 of 3 Trk # 1Z X46 599 01 9503 9384	✓		
Shipping Documentation Present?	✓		
Shipping Container: (Enthalpy) / Client / (Retain) / Return / Dispose			
Chain of Custody / Sample Documentation Present?	✓		
Chain of Custody / Sample Documentation Complete?	✓		
Holding Time Acceptable?	✓		
Logged In: Date/Time 07/26/24 12:25; Initials: KG; Location: R-13, WR-2; Shelf/Rack: A-1, E-2			
COC Anomaly/Sample Acceptance Form completed?	✓		

Comments:

CoC/Label Reconciliation Report WO# 2407240

LabNumber	CoC Sample ID		SampleAlias	Sample Date/Time		Container	BaseMatrix	Sample Comments
2407240-01	A B-932U_20240722	☐ A)	282540	22-Jul-24 10:30	☑	Polypropylene, 250mL	Aqueous	
2407240-01	B B-932U_20240722	☐ B)	282540	22-Jul-24 10:30	☑	Polypropylene, 250mL	Aqueous	
2407240-02	A B-932L_20240722	☐	282540	22-Jul-24 10:19	☑	Polypropylene, 250mL	Aqueous	
2407240-02	B B-932L_20240722	☐	282540	22-Jul-24 10:19	☑	Polypropylene, 250mL	Aqueous	

Checkmarks indicate that information on the COC reconciled with the sample label.
Any discrepancies are noted in the following columns.

	Yes	No	NA
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Adequate Sample Volume?	✓		
Container Type Appropriate for Analysis(es)	✓		

Comments:

A) Underlined part missing on sample label

B) ~ 5% particulate

Preservation Documented: Na2S2O3 (Trizma) NH4CH3CO2 None Other

T1

Verifed by/Date: KM 07/29/24

JT 07/29/24

ENTHALPY ANALYTICAL

ANOMALY FORM

Work Order # 2407240

Initial/Date — The following checked issues were noted during sample receipt and login:

- _____ ☐ **1. The samples were received out of temperature at (WI-PHT):** _____
  Was Ice present: Yes No Melted Blue Ice
- _____ ☐ 2. The Chain-of-Custody (CoC) was not relinquished properly.
- _____ ☐ 3. The CoC did not include collection time(s). 00:00 will be used unless notified otherwise.
- _____ ☐ 4. The sample(s) did not include a sample collection time. All or Sample Name: _____
- 1/30/24 ☑ 5. A sample ID discrepancy was found. See the Reconciliation report.
  The CoC Sample ID will be used unless notified otherwise.
- _____ ☐ 6. A sample date and/or time discrepancy was found. See the Reconciliation report.
  The CoC Sample date/time will be used unless notified otherwise.
- _____ ☐ **7. The CoC did not include a sample matrix. The following sample matrix will be used:** _____
- _____ ☐ **8. Insufficent volume received for analysis. All or Sample Name:** _____
- _____ ☐ 9. The backup bottle was received broken. Sample Name: _____
- _____ ☐ **10. CoC not received, illegible or destroyed.**
- _____ ☐ **11. The sample(s) were received out of holding time. All or Sample Name:** _____
- _____ ☐ **12. The CoC did not include an analysis. All or Sample Name:** _____
- _____ ☐ **13. Sample(s) received without collection date. All or Sample Name:** _____
- _____ ☐ **14. Sample(s) not received. All or Sample Name:** _____
- _____ ☐ **15. Sample(s) received broken. All or Sample Name:** _____
- _____ ☐ **16. An incorrect container-type was used. All or Sample Name:** _____
- _____ ☐ 17. The Field Reagent Blank (FRB) preservative was from a different lot than the field samples.
  Will proceed with analysis and narrate unless notified otherwise.
- _____ ☐ 18. Other:

Bolded items require sign-off

Client Contacted: _____

Date of Contact: _____

Lab Project Manager: _____

Resolution:

Chain-of-Custody Record

282540

Page 1 of 1

Sample ID	Sampling Date/Time *If Composite, Indicate Both Start & Finish Date/Time	Matrix (see below)	Grab/*Composite	Analyses Requested: PFAS- 537 Mod with isotope dilution - DoD 26 Compound List	Field Turbidity (NTU)	# of Containers	NOTES MeOH Vial #
B-932U_20240722	7/22/24 1030	GW	G	X		2	
B-932L_20240722	↓ 1019	GW	G	X		2	
Matrix: A-Air; S-Soil; GW-Ground Water; SW-Surface Water; DW-Drining Water; WW-Waste Water; AQ-Aqueous; L-Leachate Preservative: H-HCl; N-HNO3; S-H2SO4; Na-NaOH; M-MeOH; NSO-Na2S2O3				ICE			

Project Manager: M. Estabrooks / T. White

Company: Sanborn, Head & Associates, Inc.

Address: 6 Bedford Farms Drive, Suite 201

City: Bedford State: NH Zip: 03110

Phone 603-229-1900 Ext.:

Fax: 603-229-1919

E-Mail: mestabrooks.sanbornhead.com

Site Name: NCES | PFAS GW SSI

Project # 2637.11

State: NH

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

Quote #: PO#:

Date Needed:

QA/QC

Reporting Level

A **B** C

or

Presumptive Certainty

Reporting Options

Prelims: Yes or No

If Yes: Fax or PDF

Electonic Options

No Fax | E-Mail | PDF | Equis

Temp. 1.9 °C

Metals: **Samples Field Filtered:**

A:

B:

C:

Notes: (i.e., Special Detection Limits, Billing Info, If Diff

Bill NCES.
Sub Enthalpy
1)Centrifuge samples if needed
2) Please Report Sulfonic Acids
3) PFAS by 537 Mod with isotope dilution (Compound List Attached)
4) Report to RL (no J-flags)

Suspected Contamination:

Field Readings:

Sampler(s): MTS

Relinquished By:	Date:	Time:	Received By:
[signature]	7/23/24	1849	
[signature]	7/24/24	0846	[signature]

Eastern Analytical, Inc. services

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