Small Community Preliminary Well Siting Application Form
Supplemental Information Submittal

Harbor Landing, Moultonborough, NH
Proposed BRW1 and BRW2
NHDES #DR006013

July 8, 2023

Submitted to:

Mr. Andrew Koff P.G.
Community Well Siting/Hydrology
NH DES - Drinking Water Groundwater Bureau

Submitted on behalf of:

Mark P. Koss of Koss Construction, LLC
Mountain View Contracting, LLC

Submitted by:

Groundwater Withdrawal Permitting – Public Water System Management
Shoreline Permitting – Public Outreach
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Gilford, NH

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Small Production Wells for Small Community Water Systems Preliminary Report

Drinking Water and Groundwater Bureau

RSA/Rule: RSA 485:8, RSA 485:48, Env-Dw 305

PRELIMINARY REPORT COVER PAGE

PROJECT NAME	Harbor Landing
PROJECT TOWN	Moultonborough
PWS ID	TBD Concept Approval DR 006013, July 21, 2021

APPLICANT (Project/Water System Owner)

Name	Mark Koss, Koss Construction, LLC / Mountain View Contracting
Mailing Address	172 Carli Boulevard, Colchester, CT 06415
Daytime Phone Number	603-707-9340
Email Address	kossconstructionllc@gmail.com

WELL SITE OWNER (Property Owner)

Name	Mark Koss, Koss Construction, LLC / Mountain View Contracting
Mailing Address	172 Carli Boulevard, Colchester, CT 06415
Daytime Phone Number	603-707-9340
Email Address	kossconstructionllc@gmail.com

PROJECT CONTACT/REPORT PREPARER

Name	Abigail Thompson Fopiano
Company Name	Edgewater Strategies, LLC
Mailing Address	26 Chalet Drive, Gilford NH 03249
Daytime Phone Number	603-630-1971
Email Address	abby@edgewaternh.com

PUMPING TEST PERFORMER/CONTACT

Name	Edgewater Strategies, LLC	Gilford Well Company
Mailing Address	26 Chalet Drive, Gilford NH 03249	1440 Lake Shore Road, Gilford, NH 03249
Daytime Phone Number	603-630-1971	603-524-6343
Email Address	abby@edgewaternh.com	

SUBMITTAL INFORMATION

1. Project Type:
   a. _X__ New well(s) for New System
   b. ____ New well(s) for Existing System
   c. ____ Replacement well(s) for Existing System
   d. ____ Hydrofractured or Deepened well(s) for Existing System

2. Proposed source capacity volume in gallons per day: 25,200 gpd Combined, 12,600 gpd from each BRW1 and BRW2

July 8, 2023

Mr. Andrew Koff P.G.
Community Well Siting/Hydrology
NH DES - Drinking Water Groundwater Bureau
PO Box 95, 29 Hazen Drive
Concord, NH 03302

RE: Small Community Preliminary Well Siting Application Form
Harbor Landing, Moultonborough, NH
Proposed BRW1 and BRW2; NHDES #DR006013
Supplemental Information Submittal

Mr. Koff,

The following information is being submitted to the NH Department of Environmental Services (NHDES) in response to NHDES's request that we obtain and review new information relative to the proposed new small community water system, Harbor Landing, source of supply wells BRW1 and BRW2 in Moultonborough. Edgewater Strategies, LLC (Edgewater), on behalf of the property owner Mark P. Koss of Koss Construction, LLC/Mountain View Contracting, LLC (Koss), submitted a Small Community Preliminary Well Siting Application Form to NHDES for this proposed development in September 2021. Subsequent correspondence occurred since September 2021 with the last correspondence being April 21, 2022, from NHDES requesting that the Contaminant Control Program assess or control known contaminant sources. Changes to the proposed development water needs, presentation of current groundwater conditions and updates to the proposed pumping test are described within. At this time, we request NHDES's conditional approval to conduct the pumping test as part of the new source approval process with the specifications described within and per the outlined monitoring provided in the attached revised Preliminary Report Form.

1. Correspondence to Date

The following is a summary of submittals and NHDES responses on this preliminary application to date:

May 26, 2021 Brown Engineering, on behalf of Koss, submitted for NHDES review a Community Well Concept Review for Harbor Landing.

July 21, 2021 NHDES approved the concept design for 60, 3-bedroom units requiring 27,000 gallons per day (gpd), exclusive of irrigation.

September 10, 2021 Edgewater Submittal of a Small Community Preliminary Well Siting Application Form for two bedrock wells to supply water to the proposed 60, 3-bedroom townhouse condominiums.

October 1, 2021 NHDES Preliminary Application Response Letter, requesting a contamination control program, initial well testing results and clarification to the pumping rates.

March 4, 2022 Edgewater response submittal detailing the proposed private and public well monitoring program, results of the January 2022 short-term pumping test on the new wells, and a proposed contamination control program.

April 13, 2022 Edgewater Supplemental Information Submittal which included revisions to the private and public well monitoring locations, proposed off-site well testing as part of the contamination control program, and a waiver request to allow execution of the proposed 72-hour pumping test at withdrawal rates equal to calculated design flow, not source capacity.

April 21, 2022 NHDES Preliminary Application Response Letter noting "at this time NHDES will not be able to approve these sources as new community water supply wells and remain in compliance with Env-Dw 305.23, Contamination Control Program, and Env-Dw 305.29(d)(1), Criteria for approval of New Small Production Wells."

2. Overview

Two bedrock wells were installed on the property in late 2021. Initial yield and water quality testing was performed in January 2022. The initial testing indicated the wells are high-yielding and interconnected. See Edgewater letter dated March 4, 2022. Initial testing also indicates that BRW1 and BRW2 are interconnected with nearby wells documented to have detectable concentrations of per- and polyfluoroalkyl (PFAS) compounds. However, to date, PFAS has not been detected in the proposed wells. Also as noted in the March 4, 2022, letter, laboratory analysis indicated non-detectable concentrations of all VOC and PFAS compounds tested. This data confirms that Koss is not the source of the contamination. While the Thriftomat Laundromat and Red Hill Irving are known contamination sites, the source of the PFAS detections in nearby private and public water supply wells is unknown. Therefore, there is no known contamination source for PFAS under Env-DW 305.23(a).

3. Updated Project Information

Due to the proximity to the local potential contamination source, Edgewater provides a proposed Contamination Control Program that incorporated off-site well water level and water quality monitoring during the pumping test with proposed response actions after the test if the pre-existing groundwater contamination was observed to migrate.

The last correspondence on this application was from NHDES in April 2021 noting the preliminary application could not be approved "because the proposed contamination control program does not adequately assess or control nearby known contamination sources that have shown to be hydraulically connected to the proposed community wells." The proposed Contamination Control Program has been updated to address NHDES's concerns.

Since April 21, 2022, new information is available and summarized as follows:

a. The scope of the project and proposed groundwater withdrawal rates has changed to 42, 2-bedroom units with a revised calculated source capacity of 25,200 gpd.
b. The proposed permitted production volume (PPV) for BRW1 is 12,600 gpd and for BRW2 is 12,600 gpd.
c. Additional water quality sampling confirms detectable concentrations of PFAS compounds (some above drinking water standards) in groundwater upgradient, directly adjacent, and downgradient of the proposed wells.
d. Local water level monitoring depicts groundwater level fluctuations are similar in many wells indicating a highly interconnected groundwater flow system. Existing groundwater flow direction in March 2023 was from the PFAS site towards the proposed wells. Therefore, the PFAS contamination is likely to impact the proposed wells regardless of on-site withdrawals. The localized groundwater flow direction may change seasonally but that possibility does not change that the Contamination Control Program will still minimize the risk of contamination at the well from PFAS.
e. On request of NHDES's Hazardous Waste Division, a consultant for the Environmental Protection Agency (EPA) performed a desktop study in an attempt to identify a source of the local PFAS contamination. The results of this study indicated no one point source of PFAS, but rather a potential for a variety of sources through typical current and historical use of the chemicals. More investigations were recommended, it is unknown when those investigations may occur, therefore, at this time there is no known contamination source for PFAS.
f. The proposed Contamination Control Program includes water level monitoring and water quality testing in private wells.
g. If the pumping test data is favorable to continue with the Final Report and source approval request, the Contamination Control Program will be further refined. This may include long-term monitoring so as to continue to minimize the risk of contamination at BRW1 and BRW2.
h. The final water system design for the community will include installation of PFAS treatment, regardless of detections in BRW1, BRW2 and off-site wells.

4. Revisions to the Proposed Development and Summary of New Data

4.1. Revised Requested Permitted Production Volumes (PPV)

This development originally proposed 60, 3-bedroom townhouse condominiums with a calculated source capacity of 54,000 gpd. In previous correspondence, the requested PPV for each BRW1 and BRW2 was 27,000 gpd.

The proposed property buildout has changed to 42, 2-bedroom townhouse condominiums with a design flow of 12,600 gpd, calculated as 42 units x 2 bedrooms x 150 gallons per day per bedroom. This calculates to a source capacity of 25,200 gpd (twice the design flow). The requested PPV for each BRW1 and BRW2 is 12,600 gpd. The Small Production Wells for Small Community Water Systems Preliminary Report form has been updated and is included as **Attachment B**. **Figure 1** depicts the proposed layout. With a source capacity of 25,200 gpd, the sanitary protective area (SPA) radius of the wells is 175-feet.

4.2. Revised Proposed Private and Public Well Level Monitoring Program

Previous submittals discussed water level monitoring locations near the proposed wells. Over the past year there was various communication and coordination with those on the previous list of monitoring locations for initiation of water level monitoring. Currently six locations are being monitored, they are

listed in **Table 1** and **Table A** below. A revised list of wells/parcels incorporated into the private and public well water level monitoring program are shown in **Figure 2**.

Additional monitoring locations were intended, however, homeowners since declined monitoring or well access limitations existed. The current proposed list of six locations adequately addresses how water levels in wells west of the proposed development are interconnected with the proposed wells. It would be beneficial to have a water level monitoring location north and south of the proposed wells, however, these homeowners have since denied access. A request to monitor the wells to the north and south that previously granted access will be made however, may not be given. The water quality monitoring plan associated with the contamination control program is described later in this report. Water quality is proposed at all water level monitoring locations. There are proposed water quality monitoring locations that will not have water level monitoring.

4.3. Existing Groundwater Flow Conditions

Water level monitoring in the six off-site wells in the water level monitoring program and on-site BRW1 began in February 2023. Water level monitoring was initiated to gather data on existing local groundwater elevations, flow directions and interconnections/interferences between wells. Data collected from February through April is presented in **Figure 3** and **Table 2**. Elevations for the measuring points of all monitoring locations were extracted from 2-foot contour maps of the area and measurements of casing heights. The groundwater elevation data is also presented in **Table 2.** This data is also being submitted electronically. Data was recorded continually every 10 minutes at all locations.

A previously submitted groundwater flow/contour map depicting static groundwater conditions on January 24, 2022 (date of short-term pumping test) is provided. This was provided to DES in the April 13, 2022, submittal. The January 2022 map was based on four data points, groundwater flows were determined to flow from the north towards the lake. The gradient was inferred to be steeper along the path from the proposed wells through the known VOC contamination towards the Lake, and more gradual to the west.

The groundwater elevation data presented in **Figure 3** was collected through February, March, and April 2023 at six wells plus one of the proposed wells (BRW1). Each well has a high-water level that can be interpreted as the non-pumping water level trend. As wells pump water, water levels drawdown/drop/fall. When the pumps turn off the water level recovers back to non-pumping levels. Some wells will experience greater drawdowns during pumping then others based on the wells capacity to transmit water through fractures and the volume of water being used.

During this monitoring period the proposed wells BRW1 and BRW2 were not pumping. Except for a brief period on March 31, to collect water quality samples. All wells monitored show a similar trend in non-pumping levels, further indicating a highly interconnected local bedrock groundwater system. For example, the data shows there is a water use (water treatment backwash, irrigation, etc.) at 10 Bean Road that occurs at 5pm every few days that caused the water level in that wells to drop an additional 10 feet. This appears to correlate to water levels at 36 Bean Road to drop during some of those times, potentially indicating an interconnection between these wells.

A groundwater flow map was created based on elevations recorded in wells on a randomly selected date of March 3 at 12:00 am. The groundwater elevations recorded in the monitoring wells are presented in **Table 3**. The elevations and inferred groundwater flow contours for March 3 are shown on

Figure 5. The groundwater elevations for a random date of April 9 indicate similar flow direction. Also shown on **Figure 5** are locations of PFAS compound detections in groundwater.

Based on the water level and water elevation data, the groundwater flow is from the northwest or west to the southeast and east (the lake). This illustrates that the PFAS contaminated groundwater is flowing under existing conditions in the direction of the proposed wells. This information supports the new knowledge that PFAS, although not detected in the proposed wells, is already present upgradient, and down gradient of the project site. Data on existing PFAS contamination in groundwater is presented below.

4.4. Existing Groundwater Quality Conditions

Water quality sampling for PFAS compounds and VOCs were collected from ten wells between May 2022 and March 2023. These locations are listed in **Table A** below and results of the testing is provided in **Table 4**. The intent of this sampling was to gather data on existing local groundwater contamination. It has been understood that the potential of the proposed water withdrawals to migrate known PFAS contamination to the pumping wells is against the rules and RSA 485. In September 2021, the source of the PFAS was unknown, the extent of the PFAS in groundwater was unknown and what direction groundwater is flowing and transporting the PFAS was unknown. Recent investigations have provided some answers to these unknowns.

Regarding the source of the PFAS, on request of NHDESs Hazardous Waste Division a consultant for the Environmental Protection Agency (EPA) performed a desktop study in attempt to identify a source of the local PFAS contamination. The results of this study were presented in a report dated March 2023 that is included as **Attachment C**. The report indicated not one point source of PFAS, but rather potential for a variety of sources through typical current and historical use of the chemicals. The report noted, "Potential releases of PFAS-containing materials associated with operations within or near the study area may include AFFF foam used for firefighting; consumer uses of PFAS-containing materials resulting in the discharge of PFAS to the municipal sewage lagoon reservoirs, prior to further wastewater treatment, and/or discharges to private septic systems within the study area; municipal sewage sludge used for biosolids applications applied to agricultural land; and biosolids used in application of commercial landscaping activities at private residential, commercial, and municipal properties." More investigations were recommended, it is unknown when those investigations may occur. Based on the initial study, it is unlikely that a primary responsible party will be identified.

More information is known about the extent of PFAS contamination and groundwater flow directions. Water quality sampling results for PFAS compounds (list of 25 compounds) collected from ten wells between May 2022 and March 2023 as well as data previously collected by NHDES is tabulated in **Table 4** and **Attachment C** and shown in **Figure 4**. Figure 4 shows the location of all known sampling sites with identifying symbols to note whether PFAS compounds were not detected at the location (blue circle), detected but below the drinking water standard (orange square), or detected above the drinking water samples (red triangle). If two samples were collected from one location, the higher concentration results are depicted.

As shown, PFAS contaminated groundwater exists to the direct north, west, and south of the proposed development site. To date, PFAS compounds have not been detected in BRW1 or BRW2. Based on the groundwater flow direction, the existing PFAS groundwater contamination is likely to reach the project site in the future. While groundwater withdrawals from the proposed wells have the potential to

increase groundwater flow rates and/or slightly alter the groundwater flow direction, the data suggests that proposed withdrawals will not change contamination migration to a direction it otherwise would not travel. For these reasons, the Contamination Control Program for the proposed development will incorporate the installation of PFAS treatment regardless of whether PFAS is detected in BRW1 or BRW2. The benefit of including PFAS treatment in the Contamination Control Program is that it will likely act to mitigate the local groundwater contamination because the pump and treat activity will remove PFAS that would otherwise migrate through and away from the proposed development.

5. Revised Contamination Control Program in Light of Revised Development and New Data

A Contamination Control Program, per NH DES Administrative Rules Env-Dw 305.23, was proposed in Edgewater's March 4 and April 13, 2022, letters. NHDES provided further suggestions in its April 21, 2022 letter. Env-DW 305.23 and Env-DW 305.29 require Contamination Control Programs to minimize the risk of contamination at BRW1 and BRW2 from known contamination sources as well as to establish requirements, including a schedule, for monitoring and any necessary remediation of residual contamination from known contamination sources in the wellhead protection area so as to ensure that contamination will not degrade water quality at the proposed wells.

5.1. Monitoring Points in the Contamination Control Program

Water wells at the following locations are proposed to be included in the Contamination Control Program. These locations are currently undergoing water level monitoring and/or have been sampled as part of this process. These locations were chosen after responses to request to monitor mailings (previously submitted) and multiple conversations during the initiation of monitoring and receiving calls from concerned residents. This list is considered adequate to address the intents of the Contamination Control Program. Some locations were proposed to be included, but the homeowners later denied access. In addition to **Table A** below, more detailed information on the locations is included in **Table 1**.

Table A – Private and Public Well Monitoring List

Well Address/Location	Water Quality Monitoring	PFAS Detected	Water Level Monitoring
10 Bean Road	Yes: PFAS & VOC	Yes	Yes
35 Bean Road	Yes: PFAS	Yes	Yes
36 Bean Road	Yes: PFAS	No	Yes
46 Bean Road	Yes: PFAS	No	No – well inaccessible.
58 Bean Road	Yes: PFAS	Yes	No – per Homeowner
6 Lake Shore Road	Yes: PFAS & VOC	Yes	No – per Homeowner
18 Lake Shore Road	Yes: PFAS & VOC	Yes	No – Homeowner no longer responsive.
12 Whittier Highway	Yes: PFAS &VOC	Yes	Not previously monitored, owner approved to be included for downgradient location
12 Main Street (PWS Senter's Market)	Yes: PFAS	Yes	Yes
313 Whittier Highway (PWS Rubbin' Butts)	Yes: PFAS	Not Sampled	Yes
319 Whittier Highway	Yes: PFAS	Yes	Yes
Proposed Wells BRW1 & BRW2	Yes: PFAS & VOC	No	Yes

PWS = Public Water System

5.2. Water Level Monitoring in the Contamination Control Program

All locations incorporated into the Contamination Control Program are considered the Private and Public Well Water Level Monitoring plan. The well at all locations (when permitted by the homeowner) will be equipped with pressure transducers to record water levels at least every 10 minutes before, during and after testing. Bacteria sampling will be performed prior to and after equipment is installed in a well per the well monitoring protocols.

All water quality data collected will be evaluated with the pumping test water level data in aide of determining if there were any changes in groundwater quality under pumping conditions. Even though water level data suggests an interconnection with the pumping wells, this does not mean an adverse water quality impact has occurred. Water quality impacts will be based on water quality data. Current data suggests PFAS compounds exist in bedrock wells upgradient and downgradient of the proposed pumping wells and bedrock groundwater is migrating from areas of known PFAS towards the proposed wells under non-pumping conditions.

5.3. Water Quality Sampling Events in the Contamination Control Program

Water quality testing (raw samples) of off-site wells for PFAS (list of 25 compounds) and VOCs (select wells only as shown in Table A) within one week prior to the start of the pumping period and within 8-hours prior to shutdown of the pumping test.

Water quality testing (raw samples) of the two on-site wells for PFAS (list of 25 compounds) and VOCs within one week prior to the start of the pumping period, at a point between 24 and 48 hours of pumping, and within 4-hours prior to shutdown of the pumping test.

Note: In addition to the above and as part of the general requirements pumping test, both wells will undergo MPA testing during the pumping period and a full SDWA sampling event at the end of pumping period. If the waiver (described within this report) is approved, testing would be conducted on BRW1 only.

5.4. Determination of an Adverse Impact and Response

If PFAS or VOC water quality results indicates that the total combined concentration of PFASs compounds at the end of the test are greater than the total combined concentration of PFASs compounds prior to the test in any of the off-site wells monitored, a third sample will be collected between 4-6 weeks after then end of the pumping test.

A 4-to-6-week timeline is proposed as groundwater level trends and recovery patterns observed and the hydrologic characteristics described thus far for this project indicate groundwater in the bedrock is flowing readily through fractures, any change in groundwater flow direction during the long-term pumping test is expected to revert to normal conditions relatively quickly. In addition, the laboratory reports for the PFAS testing during the pumping test will not be known for 2-4 weeks after they are collected and submitted to the laboratory.

If the 3rd sample remains to indicates that the total combined concentration of PFASs compounds is over a drinking water standard and greater than the sample taken before pumping, that location will be determined to have been adversely impacted by the migration of PFAS concentrations.

If the sample collected at the end of the pumping period indicates that the total combined concentration of PFASs compounds is equal to or less than that of the sample taken before pumping, that location will be determined to not have been adversely impacted.

A well monitoring location's water level fluctuations may show an interconnection with the pumping wells, this does not mean an adverse impact has occurred.

Any well determined to be adversely impacted will be incorporated into the refined Contamination Control Program submitted as part of the Final Report. Mitigation measures may include existing public mitigation measures such as NHDES' existing rebate program which reimburses owners of private wells for the cost of installing PFAS treatment, even when the source of the PFAS is unknown as is the case here.

5.5 Refinement of the Contamination Control Program

The Contamination Control Program will be refined upon request of final well approval to account for potential adverse impacts under long-term use, even though EPA has yet to identify a known source. Refinement to the Contamination Control Program will include the commitment to install PFAS treatment for the proposed water system. Treatment for PFAS will be incorporated into the pump house design and installed whether PFAS is detected in the pumping wells or not. The refined Contamination Control Program will include PFAS water quality monitoring in nearby wells with mitigation affirmations as needed.

6. Proposed Pumping Rates for Pumping Test

6.1 Typical Household Use is Less than PPV

The Small Production Wells for Small Community Water Systems Preliminary Report form detailing the proposed pumping test has been updated and is included as **Attachment B**. Per the rules, the pumping test shall be executed at withdrawal rates equal to the source capacity of 25,200 gpd. The source capacity is calculated by doubling the design flow, which is calculated as 150 gpd per bedroom proposed (150 x 42 units x 2 bedrooms per unit = 12,600 gpd). This daily withdrawal is much higher than actual long-term use. Based knowledge of typical daily household water use in community water systems, on average each unit may use 125 gallons per day. The average daily water use is expected to be near 5,250 gpd. As such, the data collected during the pumping test will represent groundwater conditions under greater stress (up to 5 times greater) than what long-term average daily use of these wells will be. Based on the drillers yield and the water level data collected in the January 2022 short-term test, the capacity of the bedrock wells is expected to exceed that of the requested PPV.

6.2 Waiver of Env-DW 405.12(a); 305.14(b)(3); and 305.20(d)

Given that there is pre-existing PFAS and VOC contamination near BRW1 and BRW2 and the concerns of the potential for induced migration of this contamination, the April 13, 2022, submittal to NHDES included a request to waive: Env-Dw 405.12 (a) (relative to minimum total source capacity 2 times the design flow); Env-DW 305.14(b)(3) (relative to demonstrating small CWS source capacity); and Env-Dw 305.20(d) (relative to Permitted Production Volume) and run the pumping test at the design flow instead of the conservative source capacity (copy included in this submittal). Information to support this

request was provided in the April 13, 2022, submittal and is included herein by reference. Specifically, we request to withdrawal groundwater from BRW1 only at the requested permitted production volume equal to that of the design flow (12,600 gpd or at least 8.75 gpm) during the pumping test. BRW2 shall be considered a redundant well only and is not proposed to be pumped during the test under the approved waiver request.

Env-DW 305.36 and PART Env-DW 202 allow for waivers when applicants would be adversely impacted by the strict application of the rule and takes into consideration the operational or economic consequences of complying with the rule as written in comparison to the public health benefit of complying with the rule as written.

The reasons justifying the waivers are based on the January 2022 short-term test which showed that BRW1 and BRW2 are highly interconnected. The proposed bedrock wells can be considered high yielding based on the specific capacities (calculated as flow rate divided by drawdown in the pumping well) calculated for BRW1 and BRW2 during the short-term pumping test. The specific capacity for BRW1 is 1.32 gpm/ft of drawdown. The specific capacity for BRW2 is 1.31 gpm/ft of drawdown. Groundwater levels in proposed BRW1 and BRW2 returned to 97% of their pre-pumping levels within 2-hours after shutdown of the short-term pumping test, indicating a very favorable bedrock recovery rate.

BRW2 shall be considered adequate to meet the intent of Env-Dw 405.12 (b) for redundant wells. With this waiver request, the ability to follow Env-Dw 305.14 (d)(3) is requested, which allows the test to be shut down after 48 hours of pumping and before 72-hours, only if water levels have stabilized, the pumping rate was constant for the last 24 hours, the field water quality was stabilized, the MPA was collected, and all other proposed water quality samples (on-site and off-site) have been collected. This waiver request is not recognized to contradict NH RSA 485.

Pumping at the very conservative higher rates could cause more short-term stress than necessary and not allow for a true demonstration of the effect of the proposed developments long-term groundwater withdrawals on the local aquifer. Approval of the waiver will allow for an adequate assessment of whether the requested permitting production volume (equal to design flow) is sustainable. The groundwater contamination is shown to be flowing toward BRW1 and BRW2 under non-pumping conditions. The proposed Contamination Control Program will adequately assess the potential of migration the pre-existing contamination towards BRW1 and BRW2 while pumping under the more reasonable and accurate withdrawal rates.

Lastly, per Env-DW 202.06(a)(1), Env-Dw 405.12 (a); Env-DW 305.14(b)(3); and Env-Dw 305.20(d) are not expressly mandated by State or Federal statutes. For these reasons, granting the waiver, with or without conditions, will be as protective of public health as complying with the requirement as written; granting the waiver, with or without conditions, will not adversely impact NHDES's obligations under RSA 485 and obligations associated with maintaining primacy from the EPA; and strict adherence to the NH drinking water rules could cause operational or economic consequences that are not outweighed by the public health benefit of complying with the rules as written. We respectfully request that NHDES approve the waivers.

If NHDES does not approve the waivers, BRW1 and BRW2 are proposed to be pumped during the pumping test at individual withdrawal rates of 12,600 gpd or at least 8.75 gpm (the requested PPV for each well). All other monitoring and testing for the pumping test would occur regardless of the waiver approvals.

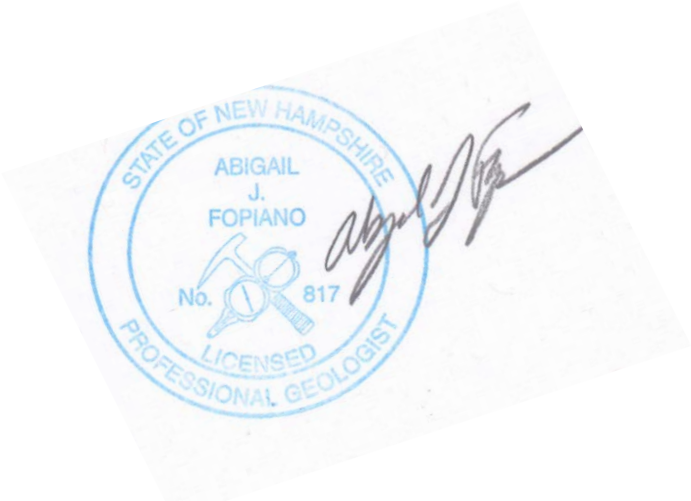
7. Conclusion

We request NHDES review and consider this information to approve, with conditions as NHDES sees fit, to perform the proposed 72-hour pumping test. If the results of the pumping test are favorable, we anticipate the submittal of a Small Production Wells for Small Community Water Systems Final Report for approval of the proposed wells. If NHDES cannot approve the pumping test or the results of the testing are not favorable, the applicant will re-evaluate the project intents and action items.

Thank you for your time. If additional information or clarification is needed, please contact me at abby@edgewaternh.com or (603) 630-1971.

Sincerely,

Abby Thompson Fopiano, P.G.
Hydrogeologist and Owner



Pursuant to Env-DW 202.05, I, Mark P. Koss, hereby certify that I have personally examined and am familiar with the information submitted in or with the waiver request; that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true and correct to the best of my knowledge and belief; and I understand that I am subject to the penalties specified in RSA 641:3 for making unsworn false statements.

Dated: July 6, 2023

KOSS CONSTRUCTION, LLC
MOUNTAIN VIEW CONTRACTING, LLC

By: Mark P. Koss

FIGURES

GENERAL NOTES:

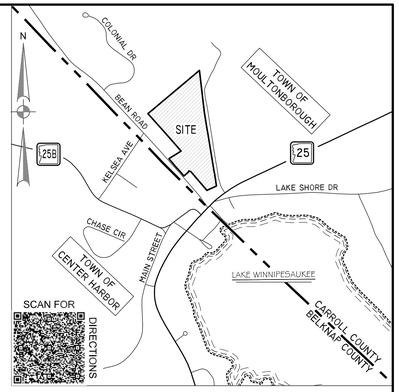
1. THE PURPOSE OF THIS PLAN IS TO SHOW THE OVERVIEW AND SHEET LAYOUTS FOR THE PROPOSED CONDITIONS
2. THE PROPERTY IS DESIGNATED TAX MAP 140 LOT 16 & TAX MAP 170 LOT 12
3. AREA OF LOT 16: 502,674 SQ.FT (11.54 AC)
   AREA OF LOT 12: 262,768 SQ.FT (6.03 AC)
   THE TOTAL COMBINED AREA OF THE EXISTING PROPERTY IS 765,352 SF, 17.57 ACRES.
4. THE OWNER OF RECORD IS:
   KOSS MARK & JACKIE
   172 CARLI BOULEVARD
   COLCHESTER, CT 06415
5. THE PROPERTY PARTIALLY LOCATED IN RESIDENTIAL/AGRICULTURAL ZONE AND COMMERCIAL ZONE A - THE ZONING DELINEATION LINE CAN BE FOUND ON SHEET EC-1
6. THE ENTIRE SITE IS LOCATED WITHIN THE WEST VILLAGE OVERLAY DISTRICT
7. A PORTION OF THE SITE IS LOCATED WITHIN A WELLHEAD PROTECTION AREA (SEE HTTP://DES.NH.GOV)
8. SEWER TO TIE INTO PUBLIC SYSTEM ON BEAN ROAD GOVERNED BY BAY DISTRICT SEWER COMMISION
9. WATER TO BE PROVIDED BY TWO PROPOSED COMMUNITY WELLS LOCATED ON SITE
10. THE SITE IS NOT IN THE ESTABLISHED FLOOD PLAIN. FEMA FIRM MAP NUMBER 33003C0580D
11. ELEVATIONS AND COORDINATES ARE BASED ON STATE PLANE COORDINATES FROM A SOLUTION GENERATED BY NGS OPUS ON APRIL 15, 2021. THE OPUS SOLUTION IS BASED ON THE NAD 83 (2011) REF. FRAME AND NAVD 88.
12. IF DURING CONSTRUCTION, IT BECOMES APPARENT THAT DEFICIENCIES EXIST IN THE APPROVED DESIGN DRAWINGS, THE OWNER SHALL BE REQUIRED TO CORRECT DEFICIENCIES TO MEET THE REQUIREMENTS OF THE REGULATIONS AT NO EXPENSE TO THE TOWN.
13. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO TOWN OF MOULTONBOROUGH SITE PLAN REGULATIONS AND THE LATEST EDITION OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
14. IN ORDER TO PROVIDE VISUAL CLARITY WITHIN THIS PLAN SET, NOT ALL ITEMS ARE SHOWN ON EVERY PLAN SHEET. THE CONTRACTOR SHALL USE THE ENTIRE PLAN SET AND NOT RELY ON INDIVIDUAL SHEETS ALONE DURING CONSTRUCTION

DIMENSIONAL STANDARDS
WEST VILLAGE OVERLAY DISTRICT

15. MINIMUM FRONTAGE: 25'
16. MINIMUM LOT SIZE WITH OFF SITE SEWAGE: 10,000 PER DWELLING UNIT
    48 PROPOSED UNITS @ 10,000 SF PER = 480,000 SF
17. SIDE LOT LINE SETBACK SHALL BE A MIN. OF 15 FT
18. REAR LOT LINE SET BACK SHALL BE A MIN. OF 15 FT
19. MAXIMUM BUILDING HEIGHT: NO MORE THAN 2 1/2 STORIES (34-FEET)
20. MAXIMUM LOT COVERAGE: THE DEVELOPMENT OF ANY LOT, INCLUDING PARKING AND DRIVEWAY AREA SHALL NOT EXCEED 50% OF THE LOT.
21. MINIMUM OF TWO (2.5) PARKING SPACES PER DWELLING UNIT

PROPOSED CONDITIONS

24. TOTAL DISTURBED AREA: 6.11 ACRES (266,581 SF)
25. TOTAL COVERAGE 113,283 SF OR 14.8% (50% MAX)
26. REQUIRED DREDGE AND FILL: 448 SF
27. TOTAL LENGTH OF PROPOSED ROADWAY = 1959 LF
28. TOTAL IMPERVIOUS WITHIN GWPOD 12.78% (15% MAX)
29. MAXIMUM PROPOSED ROADWAY SLOPE 4.14%
30. MAXIMUM PROPOSED EARTH SLOPES 3:1 (UNLESS OTHERWISE NOTED)



LOCATION MAP
1" = 1000'

SYMBOLS LEGEND

- PROPERTY LINE
- EXISTING STONE WALL
- EXISTING EDGE OF WETLAND
- 9 — PROPOSED BUILDING NUMBER
- SWMB — STORM WATER MANAGEMENT BASIN
- P550 — PROPOSED 10' CONTOUR
- P542 — PROPOSED 2' CONTOUR
- P541 — PROPOSED 1' CONTOUR
- PROPOSED TREELINE
- D — PROPOSED DRAIN PIPE
- S — PROPOSED SEWER MAIN
- W — PROPOSED WATER MAIN
- PROPOSED TREELINE
- PROPOSED DRAIN MANHOLE
- PROPOSED CATCH BASIN
- S — PROPOSED SEWER MANHOLE

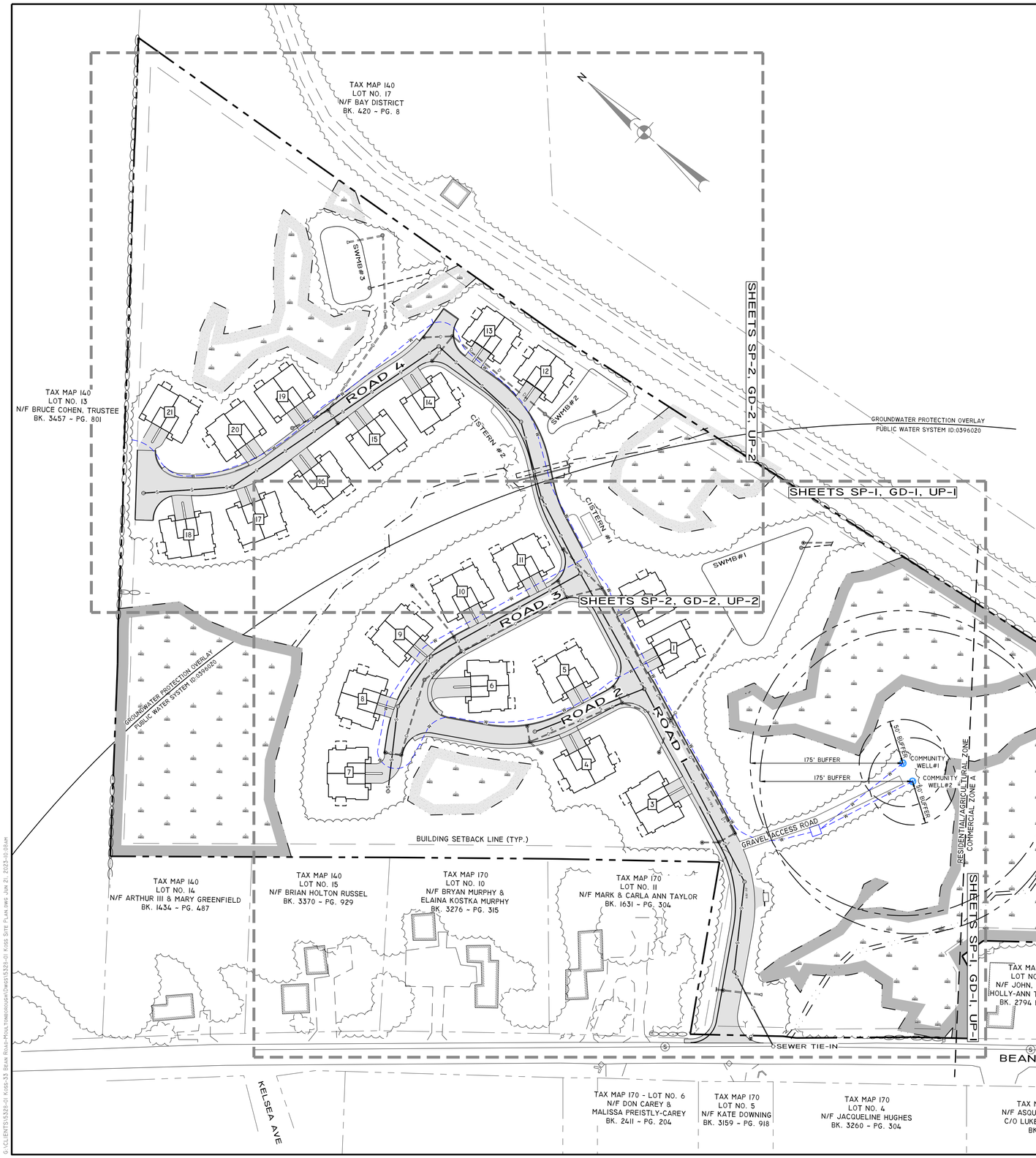


FIGURE 1

STATE OF NEW HAMPSHIRE
KENT C. BROWN
No. 7456
LICENSED
PROFESSIONAL ENGINEER

PROPOSED OVERVIEW PLAN
TAX MAP 140 LOT 16
BEAN ROAD, MOULTONBOROUGH, NH 03254

PREPARED FOR:
Koss Construction LLC
172 Carli Boulevard
Colchester, CT 06415
BOOK 3536 PAGE 0028

PREPARED BY:
BROWN ENGINEERING LLC.
63 WEST STREET-P.O. BOX 703
ASHLAND, NH 03217
Tel: (603) 744-1044
www.brownengineeringllc.com

BROWN ENGINEERING
CIVIL ENGINEERS

REV.	DATE	DESCRIPTION	BY
4	6/21/23	REVISED WELL RADII TO 175'	MJF
3	1/31/23	REDUCED NUMBER OF UNITS	MJF

Graphic Scale
60 30 0 60
SCALE: 1" = 60'

DATE: SEPTEMBER 28, 2021
JOB NO: 5328-01

OV-1
4 OF 31

G:\CLIENTS\5328-01 Koss-33 Bean Road-Moultonborough\Dwgs\5328-01 Koss Site Plan.dwg, Jun 21, 2023-10:08am

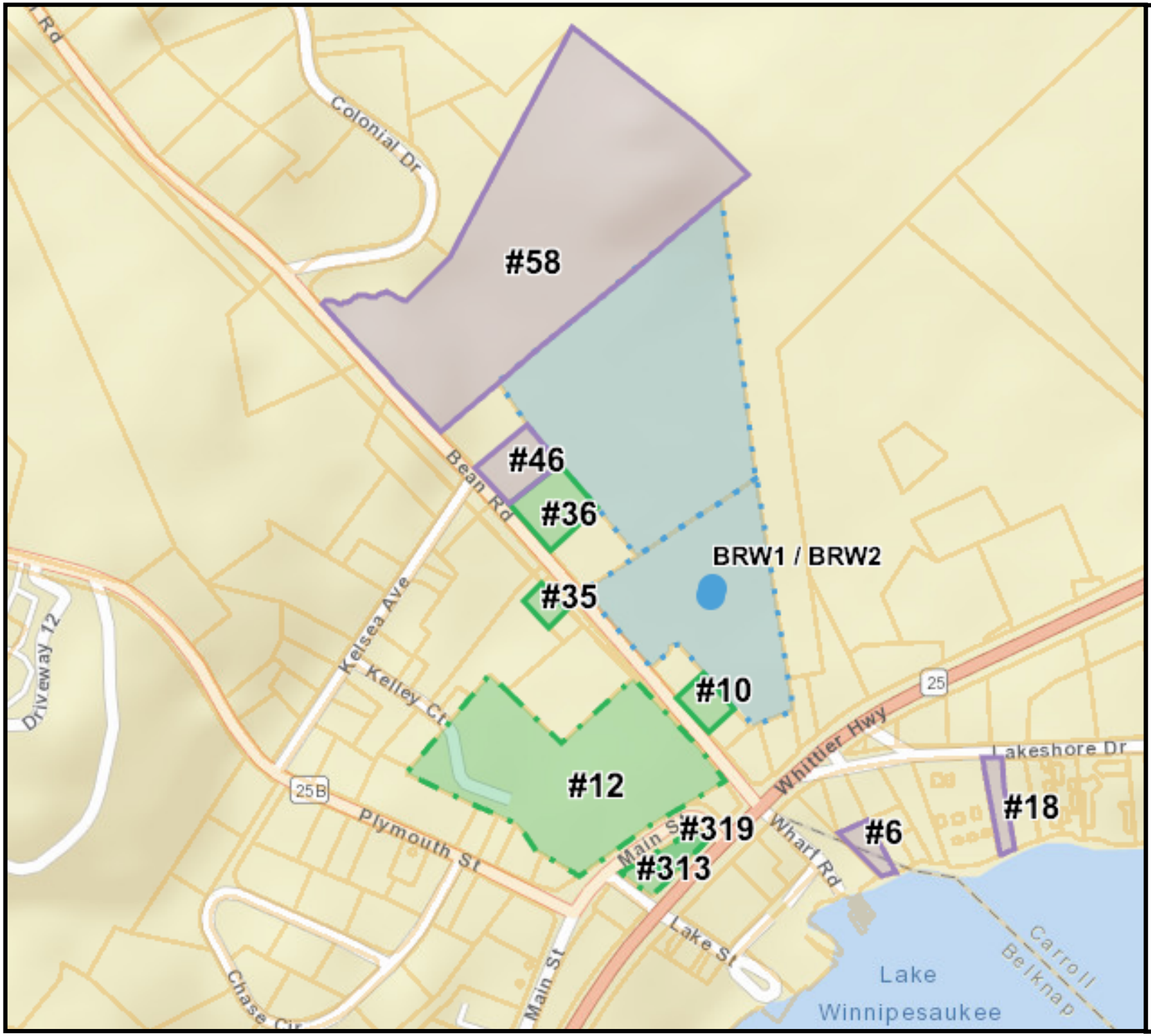


FIGURE 2
MONITORING LOCATIONS

Proposed Bedrock Water Supply Wells for Harbor Landing, Moultonborough

NH DES WELL SITING APPLICAITON

Drawn by: Edgewater Strategies, LLC
Drawn on: June 2023

Proposed Harbor Landing Property

Private Well Included in Water Level Monitoring And Water Quality Monitoring

Private Well Included in Water Quality Monitoring

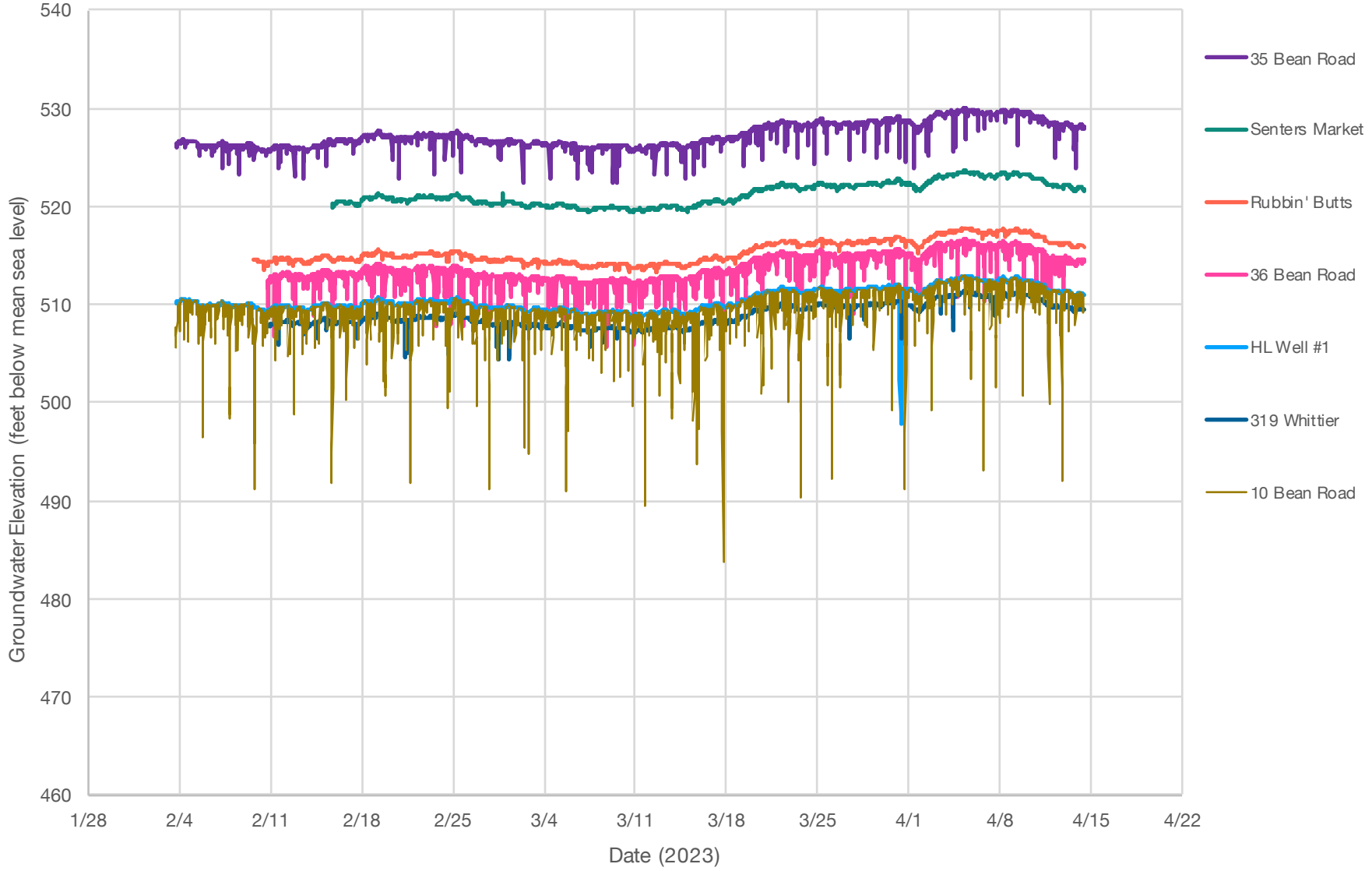
#6 House Number

North

SCALE: 1" = 600 ft

EDGEWATER STRATEGIES

FIGURE 3
Proposed Water Supply Wells for Harbor Landing, Moultonborough
Local Groundwater Elevations
February 2023 - April 2023



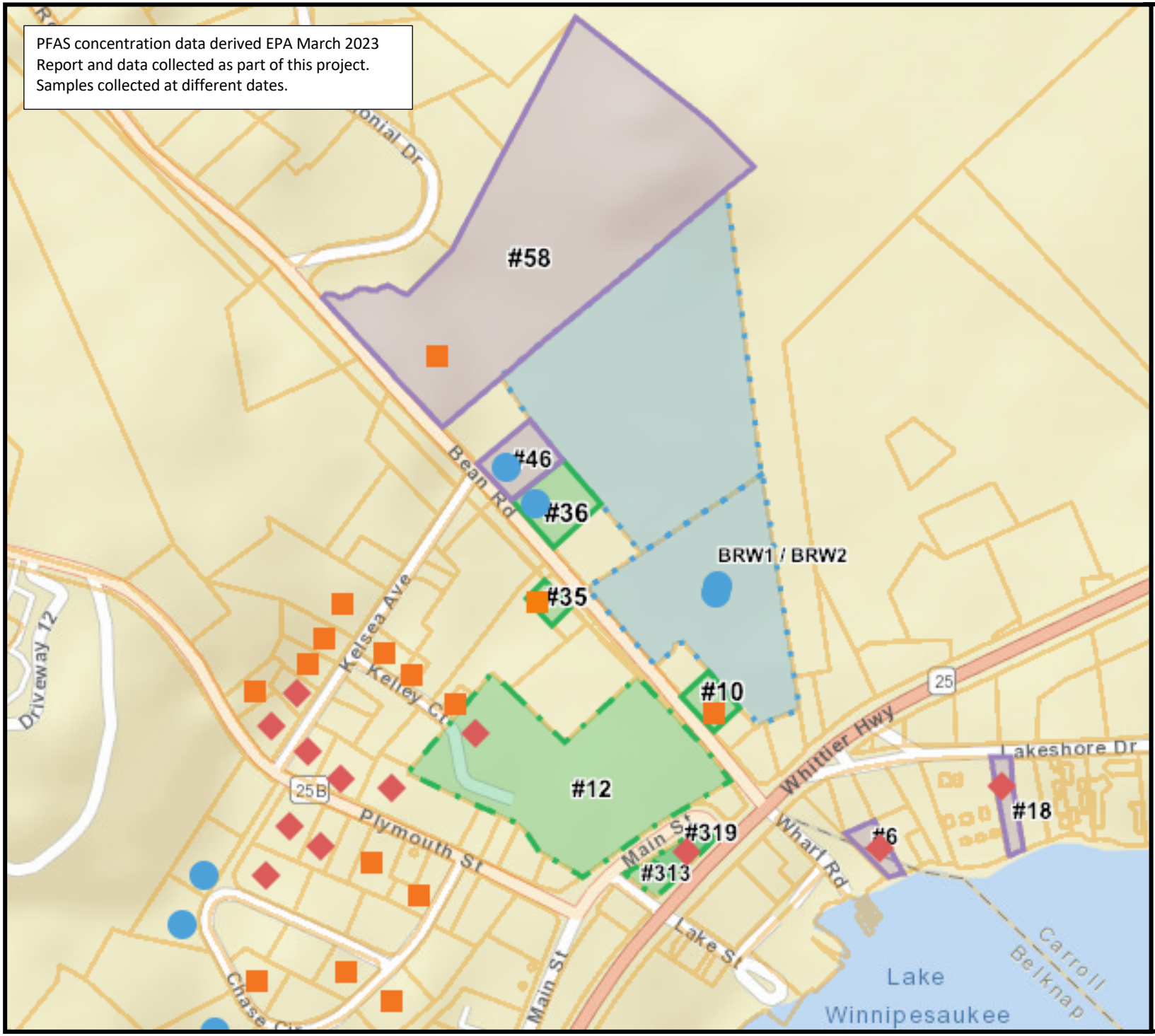


FIGURE 4
EXISTING PFAS DETECTIONS

Proposed Bedrock Water Supply Wells for Harbor Landing, Moultonborough

NH DES WELL SITING APPLICATION

Drawn by: Edgewater Strategies, LLC
Drawn on: June 2023

- Proposed Harbor Landing Property
- Private Well Included in Water Level Monitoring And Water Quality Monitoring
- Private Well Included in Water Quality Monitoring
- #6 House Number
- PFAS Detected Above MCL
- PFAS Detected Below MCL
- PFAS Not Detected

North

SCALE: 1" = 600 ft

EDGEWATER STRATEGIES
CLEAR SOLUTIONS

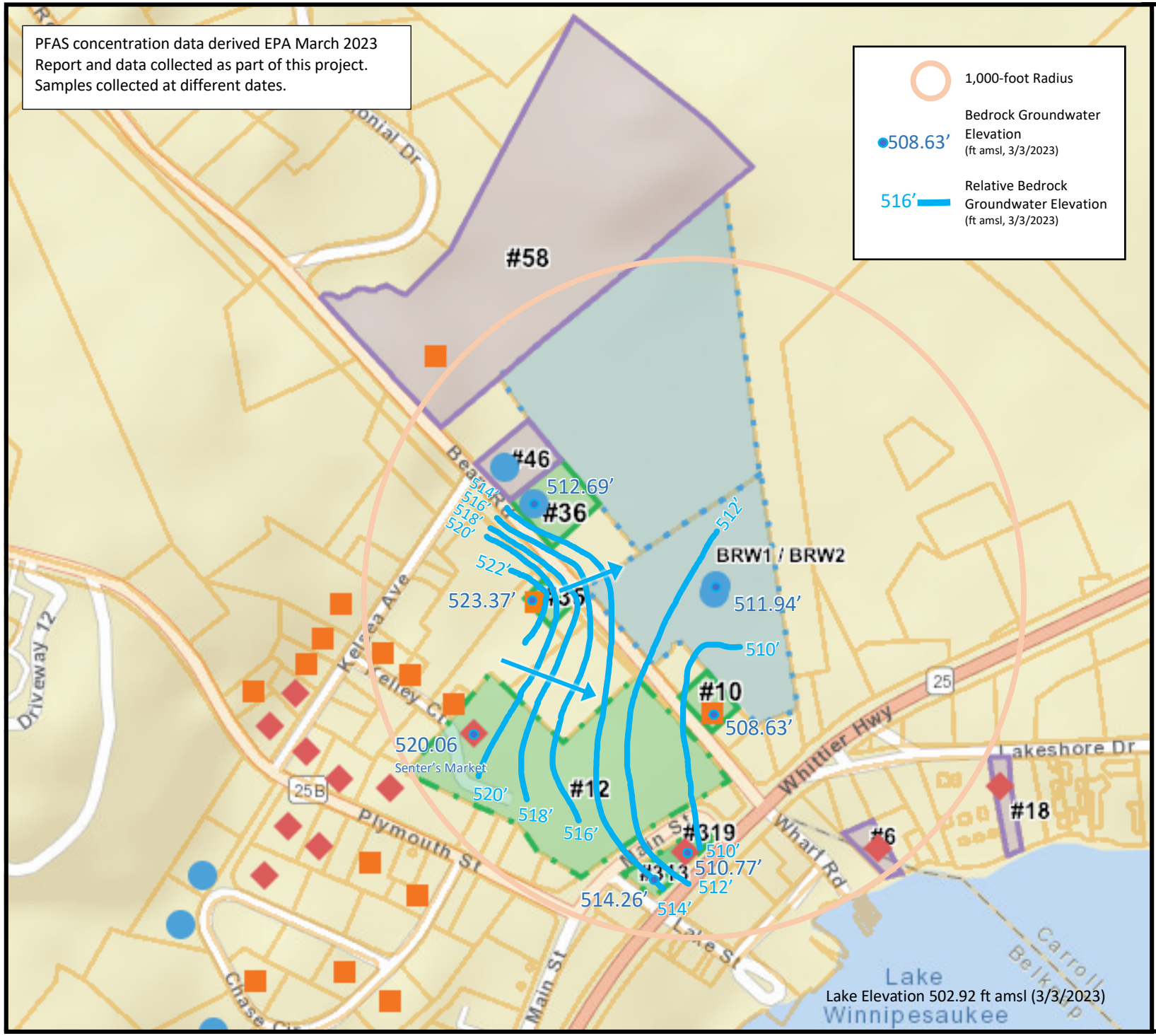


FIGURE 5
GROUNDWATER CONTOUR MAP
MARCH 3, 2023

Proposed Bedrock Water Supply Wells for Harbor Landing, Moultonborough

NH DES WELL SITING APPLICATION

Drawn by: Edgewater Strategies, LLC
Drawn on: June 2023

- Proposed Harbor Landing Property
- Private Well Included in Water Level Monitoring And Water Quality Monitoring
- Private Well Included in Water Quality Monitoring
- #6 House Number
- PFAS Detected Above MCL
- PFAS Detected Below MCL
- PFAS Not Detected

North

SCALE: 1” = 600 ft

EDGEWATER STRATEGIES
CLEAR SOLUTIONS

TABLES

Table 1

Proposed Private and Public Well Monitoring Program

Proposed Bedrock Water Supply Wells for Harbor Landing, Moultonborough

Town	Parcel Number	Property Address	Owner Name	Response	Direction from Proposed Wells	Distance from Proposed Wells (feet)	Well Depth	Year Installed	WRB #
Wells proposed to be included in the private and public well monitoring program									
MOULTONBOROUGH	170-014-000	10 BEAN ROAD	GEORGE & LAURENTINA HUBBARD	Yes	SW	300	75 ft	Mid-1940s	--
CENTER HARBOR	102-039-000	35 BEAN ROAD	DON CAREY & MALISSA PRIESTLY-CAREY	Yes	W	490	80 ft +/-	2005	040.0431
MOULTONBOROUGH	170-010-000	36 BEAN ROAD	BRYAN MURPHY & ELANA KOSTK	Yes	W	560	90 ft	Unknown	--
CENTER HARBOR	102-060-000	12 MAIN STREET	SENTERS MARKET CONDOS	Yes (PWS 0396020)	SW	700	BRW1 = 260 feet, BRW3 = 200 feet	BRW1 - 1989, BRW3 - 2021	BRW1 (040.0057). BRW3 (040.0431)
CENTER HARBOR	102-074-000	313 WHITTIER HIGHWAY	WINNVESTMENTS, LLC (Rubbin' Butts BBQ)	Yes (PWS 0398060)	SW	880	83 ft	Unknown	--
CENTER HARBOR	102-073-000	319 WHITTIER HIGHWAY	MAXFIELD PROPERTY HOLDINGS, INC	Yes	SW	760	Unknown	2000-2005	--
Wells that iniitally responded Yes to water level monitoring. Proposed to be included in water quality monitoring, but have since responded No to water level monitoring									
MOULTONBOROUGH	140-015-000	46 BEAN ROAD	BRIAN HOLTON RUSSELL	Yes, then No.	NW	740	Unknown	Unknown	--
MOULTONBOROUGH	140-013-000	58 BEAN ROAD	BRUCE COHEN	Yes, then No.	NW	1,200	Unknown	Unknown	--
MOULTONBOROUGH	169-059-000	18 LAKE SHORE DRIVE	MICHAEL FORGIONE	Yes, then No.	SE	1,125	Unknown	Unknown	--
MOULTONBOROUGH	169-065-000	6 LAKE SHORE DRIVE	HEVERN FAMILY REV TRUST 2014	Yes, then No.	SE	925	625 ft	2014	164.1881
Wells that iniitally responded Yes to water level monitoring and have since responsed No to all monitoring.									
CENTER HARBOR	102-035-000	29 KELSEA AVE	PRISCILLA MANVILLE	Yes, then No.	W	1,000	Unknown	Home built around 1900	--
MOULTONBOROUGH	170-010-000	34 BEAN ROAD	MARK & CARLA ANN TAYLOR	Yes, then No.	W	430	120 ft	1948 (Pounded, Gray Well Co.)	--
MOULTONBOROUGH	169-062-000	8 LAKE SHORE DRIVE	LINDA M & EARL R BLACKEY	Yes, then No.	SE	775	245 ft	1979	--
MOULTONBOROUGH	169-010-000	33 LAKE SHORE DRIVE	WENTWORTH FAMILY REV TRUST	Yes, then No.	E	1,150	Unknown	Unknown	--
MOULTONBOROUGH		9 WHITTIER HIGHWAY	ROBERT JONES (DAIRY BAR)	Yes, then No.	S	400	Unknown	Unknown	--
CENTER HARBOR	102-062-000	328 WHITTIER HIGHWAY	WINN HARBOR, LLC	Yes, then No.	S	810	Unknown	Unknown	--

Notes:

Distance from proposed wells is approximate and measured from BRW1 to center of parcel with well proposed to be monitored.

Information on well depth and year installed was provided by homeowner.

-- = WRB could not be found

Coorespondence regarding monirotin has occurred with Edgewater Startegies or Gilford Well during attempts to collect water quality samples and/or install monitoring equipment.

EDGEWATER STRATEGIES

Table 2
Bedrock Groundwater Elevations - February to April 2023
Proposed Water Supply Wells for Harbor Landing, Moultonborough

Date / Time	BRW1		10 Bean Road		35 Bean Road		36 Bean Road		313 Whittier Highway (Rubbin' Butts)		319 Whittier Highway		12 Main Street (Senter's Market)	
	Groundwater Level (feet below top of casing)	Groundwater Elevation (ft amsl)	Groundwater Level (feet below top of casing)	Groundwater Elevation (ft amsl)	Groundwater Level (feet below top of casing)	Groundwater Elevation (ft amsl)	Groundwater Level (feet below top of casing)	Groundwater Elevation (ft amsl)	Groundwater Level (feet below top of casing)	Groundwater Elevation (ft amsl)	Groundwater Level (feet below top of casing)	Groundwater Elevation (ft amsl)	Groundwater Level (feet below top of casing)	Groundwater Elevation (ft amsl)
2/3/23 6:00 PM	12.79	512.71	18.80	505.70	20.81	526.49	Installed 2/10/23	Installed 2/10/23	Installed 2/9/23	Installed 2/9/23	Installed 2/10/23	Installed 2/10/23	Installed 2/15/23	Installed 2/15/23
2/3/23 6:20 PM	12.78	512.72	16.86	507.64	21.18	526.12	--	--	--	--	--	--	--	--
2/3/23 6:40 PM	12.76	512.74	17.70	506.80	20.88	526.42	--	--	--	--	--	--	--	--
2/3/23 7:00 PM	12.74	512.76	16.11	508.39	20.79	526.51	--	--	--	--	--	--	--	--
2/3/23 7:20 PM	12.76	512.74	15.37	509.13	20.87	526.43	--	--	--	--	--	--	--	--
2/3/23 7:40 PM	12.76	512.74	14.89	509.61	20.86	526.44	--	--	--	--	--	--	--	--
2/3/23 8:00 PM	12.76	512.74	14.76	509.74	20.91	526.39	--	--	--	--	--	--	--	--
2/3/23 8:20 PM	12.75	512.75	16.22	508.28	20.78	526.52	--	--	--	--	--	--	--	--
2/3/23 8:40 PM	12.74	512.76	15.20	509.30	20.75	526.55	--	--	--	--	--	--	--	--
2/3/23 9:00 PM	12.74	512.76	14.75	509.75	20.74	526.56	--	--	--	--	--	--	--	--
2/3/23 9:20 PM	12.75	512.75	14.55	509.95	20.77	526.53	--	--	--	--	--	--	--	--
2/3/23 9:40 PM	12.76	512.74	14.52	509.98	20.77	526.53	--	--	--	--	--	--	--	--
2/3/23 10:00 PM	12.75	512.75	14.44	510.06	20.77	526.53	--	--	--	--	--	--	--	--
2/3/23 10:20 PM	12.74	512.76	14.49	510.01	20.81	526.49	--	--	--	--	--	--	--	--
2/3/23 10:40 PM	12.73	512.77	14.35	510.15	20.74	526.56	--	--	--	--	--	--	--	--
2/3/23 11:00 PM	12.73	512.77	14.28	510.22	20.72	526.58	--	--	--	--	--	--	--	--
2/3/23 11:20 PM	12.72	512.78	14.27	510.23	20.71	526.59	--	--	--	--	--	--	--	--
2/3/23 11:40 PM	12.71	512.79	17.20	507.30	20.73	526.57	--	--	--	--	--	--	--	--
2/4/23 12:00 AM	12.71	512.79	15.63	508.87	20.91	526.40	--	--	--	--	--	--	--	--
2/4/23 12:20 AM	12.70	512.80	14.91	509.59	20.76	526.54	--	--	--	--	--	--	--	--
2/4/23 12:40 AM	12.69	512.81	14.54	509.96	20.73	526.57	--	--	--	--	--	--	--	--
2/4/23 1:00 AM	12.68	512.82	14.34	510.16	20.70	526.60	--	--	--	--	--	--	--	--
2/4/23 1:20 AM	12.68	512.82	14.23	510.27	20.77	526.53	--	--	--	--	--	--	--	--
2/4/23 1:40 AM	12.65	512.85	14.16	510.34	20.68	526.62	--	--	--	--	--	--	--	--
2/4/23 2:00 AM	12.64	512.86	14.12	510.38	20.65	526.65	--	--	--	--	--	--	--	--
2/4/23 2:20 AM	12.61	512.89	14.09	510.42	20.75	526.55	--	--	--	--	--	--	--	--
2/4/23 2:40 AM	12.59	512.91	14.06	510.44	20.69	526.61	--	--	--	--	--	--	--	--
2/4/23 3:00 AM	12.57	512.93	14.03	510.47	20.59	526.71	--	--	--	--	--	--	--	--
2/4/23 3:20 AM	12.55	512.95	14.01	510.49	20.56	526.74	--	--	--	--	--	--	--	--
2/4/23 3:40 AM	12.54	512.96	13.98	510.52	20.61	526.69	--	--	--	--	--	--	--	--
2/4/23 4:00 AM	12.52	512.98	13.96	510.54	20.55	526.75	--	--	--	--	--	--	--	--
2/4/23 4:20 AM	12.52	512.98	13.96	510.54	20.52	526.78	--	--	--	--	--	--	--	--
2/4/23 4:40 AM	12.49	513.01	13.94	510.56	20.53	526.77	--	--	--	--	--	--	--	--
2/4/23 5:00 AM	12.49	513.01	13.93	510.57	20.51	526.80	--	--	--	--	--	--	--	--
2/4/23 5:20 AM	12.49	513.01	13.92	510.58	20.60	526.71	--	--	--	--	--	--	--	--
2/4/23 5:40 AM	12.49	513.01	14.04	510.46	20.51	526.79	--	--	--	--	--	--	--	--
2/4/23 6:00 AM	12.49	513.01	14.01	510.49	20.50	526.80	--	--	--	--	--	--	--	--
2/4/23 6:20 AM	12.49	513.01	13.96	510.54	20.52	526.78	--	--	--	--	--	--	--	--
2/4/23 6:40 AM	12.48	513.02	16.06	508.44	20.49	526.81	--	--	--	--	--	--	--	--
2/4/23 7:00 AM	12.48	513.02	15.01	509.49	20.59	526.71	--	--	--	--	--	--	--	--
2/4/23 7:20 AM	12.48	513.02	14.56	509.94	20.50	526.80	--	--	--	--	--	--	--	--
2/4/23 7:40 AM	12.49	513.01	14.27	510.23	20.62	526.68	--	--	--	--	--	--	--	--
2/4/23 8:00 AM	12.50	513.00	14.11	510.39	20.52	526.78	--	--	--	--	--	--	--	--
2/4/23 8:20 AM	12.52	512.98	14.09	510.41	20.62	526.68	--	--	--	--	--	--	--	--
2/4/23 8:40 AM	12.54	512.96	18.02	506.48	20.66	526.64	--	--	--	--	--	--	--	--
2/4/23 9:00 AM	12.55	512.95	15.98	508.52	20.68	526.62	--	--	--	--	--	--	--	--
2/4/23 9:20 AM	12.56	512.94	15.05	509.45	20.75	526.55	--	--	--	--	--	--	--	--
2/4/23 9:40 AM	12.55	512.95	14.76	509.74	20.65	526.65	--	--	--	--	--	--	--	--
2/4/23 10:00 AM	12.56	512.94	14.55	509.95	20.65	526.65	--	--	--	--	--	--	--	--
2/4/23 10:20 AM	12.57	512.93	16.09	508.41	20.74	526.56	--	--	--	--	--	--	--	--
2/4/23 10:40 AM	12.57	512.93	14.86	509.64	21.34	525.96	--	--	--	--	--	--	--	--
2/4/23 11:00 AM	12.56	512.94	14.47	510.03	20.73	526.57	--	--	--	--	--	--	--	--
2/4/23 11:20 AM	12.56	512.94	14.29	510.21	20.61	526.70	--	--	--	--	--	--	--	--
2/4/23 11:40 AM	12.56	512.94	14.18	510.32	20.65	526.65	--	--	--	--	--	--	--	--
2/4/23 12:00 PM	12.59	512.91	14.17	510.33	20.65	526.65	--	--	--	--	--	--	--	--
2/4/23 12:20 PM	12.59	512.91	14.11	510.39	20.61	526.69	--	--	--	--	--	--	--	--
2/4/23 12:40 PM	12.58	512.92	14.07	510.43	20.60	526.70	--	--	--	--	--	--	--	--
2/4/23 1:00 PM	12.56	512.94	14.04	510.46	20.64	526.66	--	--	--	--	--	--	--	--
2/4/23 1:20 PM	12.56	512.94	14.02	510.48	20.63	526.67	--	--	--	--	--	--	--	--
2/4/23 1:40 PM	12.55	512.95	14.00	510.50	20.70	526.60	--	--	--	--	--	--	--	--
2/4/23 2:00 PM	12.54	512.96	14.02	510.48	20.79	526.51	--	--	--	--	--	--	--	--
2/4/23 2:20 PM	12.54	512.96	14.16	510.34	20.67	526.63	--	--	--	--	--	--	--	--
2/4/23 2:40 PM	12.62	512.88	18.34	506.16	20.73	526.57	--	--	--	--	--	--	--	--
2/4/23 3:00 PM	12.64	512.86	17.14	507.36	20.70	526.60	--	--	--	--	--	--	--	--
2/4/23 3:20 PM	12.60	512.90	15.66	508.84	20.62	526.68	--	--	--	--	--	--	--	--
2/4/23 3:40 PM	12.57	512.93	14.90	509.60	20.67	526.63	--	--	--	--	--	--	--	--
2/4/23 4:00 PM	12.54	512.96	14.48	510.03	20.56	526.74	--	--	--	--	--	--	--	--
2/4/23 4:20 PM	12.53	512.97	14.24	510.26	20.60	526.70	--	--	--	--	--	--	--	--
2/4/23 4:40 PM	12.52	512.99	14.11	510.39	20.65	526.65	--	--	--	--	--	--	--	--
2/4/23 5:00 PM	12.51	512.99	14.04	510.46	20.64	526.66	--	--	--	--	--	--	--	--
2/4/23 5:20 PM	12.50	513.00	13.99	510.51	20.61	526.70	--	--	--	--	--	--	--	--
2/4/23 5:40 PM	12.52	512.98	13.96	510.54	20.66	526.64	--	--	--	--	--	--	--	--
2/4/23 6:00 PM	12.52	512.98	13.96	510.54	20.57	526.73	--	--	--	--	--	--	--	--
2/4/23 6:20 PM	12.53	512.97	13.96	510.54	20.55	526.75	--	--	--	--	--	--	--	--
2/4/23 6:40 PM	12.54	512.96	14.83	509.67	20.57	526.73	--	--	--	--	--	--	--	--
2/4/23 7:00 PM	12.54	512.96	14.42	510.08	20.68	526.62	--	--	--	--	--	--	--	--
2/4/23 7:20 PM	12.55	512.95	14.20	510.30	20.57	526.73	--	--	--	--	--	--	--	--
2/4/23 7:40 PM	12.56	512.94	14.18	510.32	20.57	526.73	--	--	--	--	--	--	--	--
2/4/23 8:00 PM	12.56	512.94	14.11	510.39	20.57	526.73	--	--	--	--	--	--	--	--
2/4/23 8:20 PM	12.58	512.92	14.13	510.37	20.64	526.66	--	--	--	--	--	--	--	--
2/4/23 8:40 PM	12.58	512.92	14.13	510.37	20.70	526.60	--	--	--	--	--	--	--	--
2/4/23 9:00 PM	12.59	512.91	15.20	509.30	20.63	526.67	--	--	--	--	--	--	--	--
2/4/23 9:20 PM	12.62	512.88	14.68	509.82	20.70	526.60	--	--	--	--	--	--	--	--
2/4/23 9:40 PM	12.63	512.87	14.48	510.02	20.65	526.65	--	--	--	--	--	--	--	--
2/4/23 10:00 PM	12.64	512.86	14.32	510.18	20.65	526.65	--	--	--	--	--	--	--	--
2/4/23 10:20 PM	12.63	512.87	14.28	510.22	20.67	526.63	--	--	--	--	--	--	--	--
2/4/23 10:40 PM	12.63	512.87	14.20	510.30	20.64	526.66	--	--	--	--	--	--	--	--
2/4/23 11:00 PM	12.65	512.85	14.22	510.28	20.66	526.64	--	--	--	--	--	--	--	--
2/4/23 11:20 PM	12.66	512.84	15.09	509.41	20.66	526.64	--	--	--	--	--	--	--	--
2/4/23 11:40 PM	12.66	512.84	15.42	509.08	20.66	526.64	--	--	--	--	--	--	--	--
2/5/23 12:00 AM	12.65	512.85	14.76	509.74	20.66	526.64	--	--	--	--	--	--	--	--
2/5/23 12:20 AM	12.65	512.85	14.44	510.06	20.65	526.65	--	--	--	--	--	--	--	--
2/5/23 12:40 AM	12.65	512.85	14.28	510.22	20.65	526.65	--	--	--	--	--	--	--	--
2/5/23 1:00 AM	12.65	512.85	14.20	510.30	20.65	526.65	--	--	--	--	--	--	--	--
2/5/23 1:20 AM	12.66	512.84	14.15	510.35	20.67	526.63	--	--	--	--	--	--	--	--
2/5/23 1:40 AM	12.64	512.86	14.17	510.33	20.65	526.65	--	--	--	--	--	--	--	--
2/5/23 2:00 AM	12.63	512.87	14.18	510.32	20.64	526.66	--	--	--	--	--	--	--	--
2/5/23 2:20 AM	12.63	512.87	14.19	510.31	20.64	526.66	--	--	--	--	--	--	--	--
2/5/23 2:40 AM	12.63	512.87	14.21	510.29	20.64	526.66	--	--	--	--	--	--	--	--
2/5/23 3:00 AM	12.64	512.86	14.16	510.34	20.72	526.58	--	--	--	--	--	--	--	--
2/5/23 3:20 AM	12.63	512.87	14.12	510.38	20.65	526.65	--	--	--	--	--	--	--	--
2/5/23 3:40 AM	12.65	512.85	14.11	510.39	20.67	526.63	--	--	--	--	--	--	--	--
2/5/23 4:00 AM	12.66	512.84	14.11	510.39	20.71	526.59	--	--	--	--	--	--	--	--
2/5/23 4:20 AM	12.66	512.84	14.11	510.39	20.67	526.63	--	--	--	--	--	--	--	--
2/5/23 4:40 AM	12.66	512.84	14.12	510.38	20.67	526.63	--	--	--	--	--	--	--	--
2/5/23 5:00 AM	12.65	512.85	14.09	510.41	20.66	526.64	--	--	--	--	--	--	--	--
2/5/23 5:20 AM	12.66	512.85	14.09	510.41	20.74	526.57	--	--	--	--	--	--	--	--

Table 3
Bedrock Groundwater Elevations - March 3 and April 9, 2023
Proposed Water Supply Wells for Harbor Landing, Moultonborough

Location	Ground Elevation (Ft amsl)	TOC Height (Ft ags)	Depth to Water 3/3/23 12am (ft btoc)	Water Level Elevation 3/3/23 (Ft amsl)	Depth to Water 4/9/23 12am (ft btoc)	Water Level Elevation 4/9/23 (Ft amsl)
BRW1	523	2.5	13.56	511.94	10.33	515.17
10 Bean Road	522	2.5	15.87	508.63	11.82	512.68
Senters Market BRW1	549	3	31.94	520.06	28.62	523.38
Rubbin' Butts BBQ	532	2	19.74	514.26	16.44	517.56
35 Bean Road	542	2.3	20.93	523.37	17.56	526.74
36 Bean Road	553	0.5	40.81	512.69	37.27	516.23
319 Whittier Highway	526	-3	15.23	510.77	11.92	514.08
Lake Winnipesaukee Level	504.32	--	--	502.92	--	503.69

NOTES:
DTW = depth to water (ft btoc). WL Elevation = groundwater elevation amsl, AGS = above ground surface, AMSL = above mean sea level
TOC = top of casing height from ground surface, as reported by Gilford Well.
* = Drawdown elevations in the pumping wells are affected by well losses, inefficiencies and immediate cone of depression in pumping well.
Groundwater elevations under the same pumping conditions in the direct vicinty of the wells in not known.
Lake Winnipesaukee surface water Elevation derived from NH DES lake gauge data for 3/3/2023.
Proposed BRW1 and BRW2 elevations derived from Site Plans by Brown Engineering, 2021. Match to Town of Moultonboro GIS maps 2-ft elevation contours.
Other well elevations derived from Town of Moultonboro GIS maps 2-ft elevation contours where well is located onsite.
March 3 and April 9 were randomly selected

EDGEWATER STRATEGIES
CLEAN SOLUTIONS

Table 4
Bedrock Groundwater Quality Data
Proposed Water Supply Wells for Harbor Landing, Moultonborough

Property Address		Owner Name	Sample Location	Date Sampled	VOC	PFAS	PFOA (MCL = 12 ppt)	PFOS (MCL = 15 ppt)	PFHxS (MCL = 18 ppt)	PFNA (MCL = 11 ppt)	Total of 4 Regulated Compounds (ppt)	Total Other PFAS Compounds (ppt)	Water Level Monitoring
10 BEAN ROAD	MOULTONBOROUGH	GEORGE & LAURENTINA HUBBARD	After Treatment	**3/2/2023**	ND	Present (PFOA+)	**9.36**	**2.95**	ND	ND	**12.31**	**19.19**	**YES**
35 BEAN ROAD	CENTER HARBOR	DON CAREY & MALISSA PRIESTLY-CAREY	Untreated	**3/1/2023**	ND	Present (PFOS)	ND	**3.97**	ND	ND	**3.97**	ND	**YES**
36 BEAN ROAD	MOULTONBOROUGH	BRYAN MURPHY & ELANA KOSTK	Untreated	**3/3/2023**	ND (2022)	ND	ND	ND	ND	ND	ND	ND	**YES**
46 BEAN ROAD	MOULTONBOROUGH	BRIAN HOLTON RUSSEL	Untreated	**5/31/2022**	N/A	ND	ND	ND	ND	ND	ND	ND	**NO**
58 BEAN ROAD	MOULTONBOROUGH	BRUCE COHEN	Untreated	**3/9/2023**	N/A	Present (PFOA)	**2.24**	ND	ND	ND	**2.24**	ND	**NO**
6 LAKE SHORE DRIVE	MOULTONBOROUGH	HEVERN FAMILY REV TRUST	Untreated	**7/26/2022**	**Detected***	Present (PFOA+)	**24.5**	ND	ND	NH	**24.5**	**45.3**	**NO**
18 LAKE SHORE DRIVE	MOULTONBOROUGH	MICHAEL FORGIONE	Untreated	**3/2/2023**	ND	Present (PFOA+)	**19.6**	ND	ND	ND	**19.6**	**41.74**	**NO**
12 MAIN STREET	CENTER HARBOR	SENTERS MARKET CONDOS (PWS 0396020)	Untreated	**Quarterly**	ND (2022)	Present (PFOA)	**11.5**	ND	ND	ND	**11.5**	N/A	**YES**
319 WHITTIER HIGHWAY	CENTER HARBOR	MAXFIELD PROPERTY HOLDINGS, INC	Untreated	**7/26/2022**	ND	Present (PFOA+)	**15.7**	**7.12**	ND	**2.37**	**25.19**	**51.29**	**YES**
PROPOSED BRW1	MOULTONBOROUGH	KOSS CONSTRUCTION	Untreated	**3/31/2023**	ND	ND	ND	ND	ND	ND	ND	ND	**YES**

Notes:
Bold = detected above laboratory detection limts
Shaded/Red = exceeds maximum contaminant level (MCL)
ND = Not detected, no detection limit reported, NS = Not specified, NE = Not established, N/A = Not analyzed
MCL = Maximum Contaminant Level
Samples collected on different dates
*The sample at 6 Lake Shore Drive indicated detectabel concentrations of MTBE at 2.9 ppb, TriChloroethlyene at 3.4 ppb, and cis 1,2-Dichloroethylene at 3.3 ppb,

ATTACHMENT A
PRIVATE AND PUBLIC WELL WATER QUALITY RESULTS

ATTACHMENT A-1
10 BEAN ROAD

490 East Industrial Park Drive
Manchester, NH 03109
www.nelsonanalytical.com
(603)622-0200
NH ELAP Accreditation #NH1005

NELSON ANALYTICAL LAB

Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report Of Analysis

Customer :	**Gilford Well Co., Inc.**	**Date Collected:**	**03/02/2023 10:15 AM**
Client Sample ID:	**Mountain View Contracting - Harbor Landing, #23-063**	**Collected By :**	**J. B.**
Laboratory ID:	**123030216.01**	**Date Received :**	**03/02/2023 04:15 PM**
Sample Matrix :	**Drilled Well Water**	**Temperature Rec'd°C:**	**4.7**
Sample Location:	**10 Bean Road, Moultonborough, NH (Treated - Manganese)**		

Parameter	Result	Units	Method	Rpt Limit	Q	Date/Time Analyzed	Analyst
Per-and Polyfluoroalkyl Substances-PFAS	See Attached		LC/MS/MS		P5	03/10/2023 16:24	SUB3

P5 ng/L is equivalent to Parts per Trillion (ppt). Analysis was performed by Alpha Analytical NH ELAP 2062. More information regarding PFC's is available on New Hampshire DES's website: https://www4.des.nh.us/nh-pfas-investigation/ The following limits apply to public water systems in the State of New Hampshire: PFHxS 18 ng/L, PFOA 12 ng/L, PFNA 11 ng/L, PFOS 15 ng/L

Respectfully Submitted

Andrew Nelson, Laboratory Director

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". Nitrate is a non-accredited test for noncompliance water samples. This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
Solid samples are reported on a dry weight basis unless noted otherwise.
Subcontract Laboratories: SUB2: Nelson Analytical Maine NH2018 SUB 7: Nelson Analytical EAI Div. NH1007, SUB3: 2062 SUB4:2073/2239, SUB5:NH2530, SUB8:NH2136,
https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 03/15/2023 17:32

ANALYTICAL REPORT

Lab Number:	L2311451
Client:	Nelson Analytical Lab 490 East Industrial Park Dr Manchester, NH 03103
ATTN:	
Phone:	(603) 622-0200
Project Name:	123030216
Project Number:	Not Specified
Report Date:	03/13/23

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

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: 123030216
Project Number: Not Specified

Lab Number: L2311451
Report Date: 03/13/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2311451-01	123030216	DW	Not Specified	03/02/23 10:15	03/06/23

Project Name: 123030216 **Lab Number:** L2311451
Project Number: Not Specified **Report Date:** 03/13/23

Case Narrative

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

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

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

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

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

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

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

Authorized Signature:  Darian Dailey

Title: Technical Director/Representative Date: 03/13/23

ORGANICS

SEMIVOLATILES

Project Name: 123030216 **Lab Number:** L2311451

Project Number: Not Specified **Report Date:** 03/13/23

SAMPLE RESULTS

Lab ID: L2311451-01
Client ID: 123030216
Sample Location: Not Specified

Date Collected: 03/02/23 10:15
Date Received: 03/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 136,533
Analytical Date: 03/10/23 16:24
Analyst: CAP

Extraction Method: EPA 533
Extraction Date: 03/09/23 17:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	4.68		ng/l	2.00	--	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	7.81		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.00	--	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.00	--	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	3.94		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	2.76		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	9.36		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	2.95		ng/l	2.00	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1

Project Name: 123030216 **Lab Number:** L2311451

Project Number: Not Specified **Report Date:** 03/13/23

SAMPLE RESULTS

Lab ID: L2311451-01 Date Collected: 03/02/23 10:15
Client ID: 123030216 Date Received: 03/06/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	117		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	122		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	115		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	169		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	113		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	119		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	117		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	113		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	145		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	130		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	114		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	133		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	142		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	145		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	148		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	96		50-200

Project Name: 123030216 **Lab Number:** L2311451

Project Number: Not Specified **Report Date:** 03/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 136,533
Analytical Date: 03/10/23 15:31
Analyst: CAP

Extraction Method: EPA 533
Extraction Date: 03/09/23 17:22

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab for sample(s): 01 Batch: WG1752831-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.00	--
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.00	--
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.00	--
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	2.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--

Project Name: 123030216 **Lab Number:** L2311451

Project Number: Not Specified **Report Date:** 03/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 136,533
Analytical Date: 03/10/23 15:31
Analyst: CAP

Extraction Method: EPA 533
Extraction Date: 03/09/23 17:22

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab for sample(s): 01 Batch: WG1752831-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	109		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	121		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	124		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	137		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	103		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	113		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	120		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	113		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	137		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	125		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	126		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	120		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	148		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	132		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	137		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	102		50-200

Lab Control Sample Analysis

Batch Quality Control

Project Name: 123030216 **Lab Number:** L2311451

Project Number: Not Specified **Report Date:** 03/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 Batch: WG1752831-2								
Perfluorobutanoic Acid (PFBA)	93		-		70-130	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	90		-		70-130	-		30
Perfluoropentanoic Acid (PFPeA)	97		-		70-130	-		30
Perfluorobutanesulfonic Acid (PFBS)	88		-		70-130	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	86		-		70-130	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	93		-		70-130	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	80		-		70-130	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	94		-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	101		-		70-130	-		30
Perfluoropentanesulfonic Acid (PFPeS)	84		-		70-130	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	88		-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	96		-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	78		-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	73		-		70-130	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	98		-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	93		-		70-130	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	82		-		70-130	-		30
Perfluorononanoic Acid (PFNA)	95		-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	84		-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	90		-		70-130	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	100		-		70-130	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 123030216 **Lab Number:** L2311451

Project Number: Not Specified **Report Date:** 03/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 Batch: WG1752831-2								
Perfluorodecanoic Acid (PFDA)	86		-		70-130	-		30
Perfluoroundecanoic Acid (PFUnA)	100		-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	89		-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	99		-		70-130	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	68				50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	76				50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	113				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	137				50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	69				50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	78				50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	124				50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	84				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	123				50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	95				50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	116				50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	105				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	140				50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	108				50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	122				50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	59				50-200

Matrix Spike Analysis

Batch Quality Control

Project Name: 123030216 **Lab Number:** L2311451

Project Number: Not Specified **Report Date:** 03/13/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1752831-3 QC Sample: L2311446-01 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	ND	181	176	97		-	-		70-130	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	181	180	99		-	-		70-130	-		30
Perfluoropentanoic Acid (PFPeA)	ND	181	179	99		-	-		70-130	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	161	142	88		-	-		70-130	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	181	175	97		-	-		70-130	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	161	147	91		-	-		70-130	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	181	147	81		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	170	149	88		-	-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	2.89	181	178	97		-	-		70-130	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	170	150	88		-	-		70-130	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	181	157	87		-	-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	ND	181	190	105		-	-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	165	151	92		-	-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	171	151	88		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	172	152	88		-	-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	6.49	181	178	95		-	-		70-130	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	173	174	101		-	-		70-130	-		30
Perfluorononanoic Acid (PFNA)	ND	181	184	102		-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	168	162	96		-	-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	169	174	103		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	174	156	90		-	-		70-130	-		30
Perfluorodecanoic Acid (PFDA)	ND	181	167	92		-	-		70-130	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: 123030216 **Lab Number:** L2311451

Project Number: Not Specified **Report Date:** 03/13/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1752831-3 QC Sample: L2311446-01 Client ID: MS Sample												
Perfluoroundecanoic Acid (PFUnA)	ND	181	182	101		-	-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	171	173	101		-	-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	ND	181	179	99		-	-		70-130	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	164				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	167				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	147				50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	87				50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	115				50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	109				50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	100				50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92				50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	117				50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	124				50-200
Perfluoro[13C4]Butanoic Acid (MPFBA)	97				50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	106				50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	111				50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96				50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	100				50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	120				50-200

Lab Duplicate Analysis
Batch Quality Control

Project Name: 123030216
Project Number: Not Specified
Lab Number: L2311451
Report Date: 03/13/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1752831-4 QC Sample: L2312118-01 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	3.01	2.93	ng/l	3		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	ND	ng/l	NC		30
Perfluoropentanoic Acid (PFPeA)	2.15	2.08	ng/l	3		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/l	NC		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	ND	ng/l	NC		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	ND	ng/l	NC		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	2.27	2.12	ng/l	7		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/l	NC		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/l	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	3.99	3.38	ng/l	17		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	2.08	ng/l	NC		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: 123030216
Project Number: Not Specified
Lab Number: L2311451
Report Date: 03/13/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1752831-4 QC Sample: L2312118-01 Client ID: DUP Sample						
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	108		111		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	114		119		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	103		101		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	179		173		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	92		93		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	96		101		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	104		97		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	102		111		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	173		166		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	114		120		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	113		107		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	119		122		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	159		150		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	119		117		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	128		122		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	84		89		50-200

Project Name: 123030216 **Lab Number:** L2311451

Project Number: Not Specified **Report Date:** 03/13/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2311451-01A	Plastic 250ml Ammonium Acetate preserved	A	NA		3.6	Y	Absent		A2-NH-533(28)
L2311451-01B	Plastic 250ml Ammonium Acetate preserved	A	NA		3.6	Y	Absent		A2-NH-533(28)

*Values in parentheses indicate holding time in days

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA/PFTeDA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS/PFDoS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
Perfluoropropanesulfonic Acid	PFPrS	423-41-6
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA/PFOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: 123030216
Project Number:

Lab Number: L2311451
Report Date: 03/13/23

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
FLUOROTELOMER CARBOXYLIC ACIDS (FTCAs)		
3-Perfluoroheptyl Propanoic Acid	7:3FTCA	812-70-4
2H,2H,3H,3H-Perfluorooctanoic Acid	5:3FTCA	914637-49-3
3-Perfluoropropyl Propanoic Acid	3:3FTCA	356-02-5

Project Name: 123030216 **Lab Number:** L2311451

Project Number: Not Specified **Report Date:** 03/13/23

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

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

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

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

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

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

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

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

Report Format: Data Usability Report

Project Name: 123030216 **Lab Number:** L2311451

Project Number: Not Specified **Report Date:** 03/13/23

Footnotes

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

Terms

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

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

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

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

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

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

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

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

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

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

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

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

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

Report Format: Data Usability Report

Project Name: 123030216 **Lab Number:** L2311451

Project Number: Not Specified **Report Date:** 03/13/23

Data Qualifiers

ND - Not detected at the reporting limit (RL) for the sample.

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: Data Usability Report

Project Name: 123030216 **Lab Number:** L2311451

Project Number: Not Specified **Report Date:** 03/13/23

REFERENCES

136 Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 533, EPA Document 815-B-19-020, November 2019.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

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

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

Westborough Facility:

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

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

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

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

3/6/23

L2511431

NELSON ANALYTICAL LAB

SUBCONTRACTOR SUBMISSION FORM

NELSON ANALYTICAL LAB
490 EAST INDUSTRIAL PARK DRIVE
MANCHESTER, NH 03109
PHONE: 603-622-0200

PAGE ____ OF _____

SUBCONTRACTOR INFORMATION			SAMPLE TYPE	REQUESTED TESTING							
Subcontracted to:		Alpha	DW - Drinking Water WW - Waste Water SW - Surface Water S - Soil O - Other	EPA 533	NH 25 compounds						LABORATORY SAMPLE I.D. NUMBER (LAB USE)
Address											
Contact Person											
Phone / Fax Number											
Sample Date	Sample Time	Sample Description / Identification									
-01 3/2/23	1015	12303016	DW	X	X						

Relinquished By (signature)	Date	Time	Received By (signature)
M. Mu	3/6/23	16:40	DRDas NRL
DRDas NRL	3-6-23	17:00	

Remarks Please Email/Fax Results when complete to: info@nelsonanalytical.com

Samples Iced in transit or preserved per method requirements

3/6/23 1930 3/6/23 1930

FRM-NH-Subcontract Submission Form Blank-01 09/11/2015

3/6/23 2100 3/6/23

490 East Industrial Park Drive
Manchester, NH 03109
www.nelsonanalytical.com
(603)622-0200
NH ELAP Accreditation #NH1005

NELSON ANALYTICAL LAB

Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

Customer: Gilford Well Co., Inc.
Client Sample ID: Mountain View Contracting - Harbor Landing, #23-063
Laboratory ID: 123030215.01
Sample Matrix : Drilled Well Water
Sample Location: 10 Bean Road, Moultonborough, NH (Treated - Manganese)

Date Collected: 03/02/2023 10:15 AM
Collected By : J. B.
Date Received : 03/02/2023 04:15 PM
Temperature Rec'd °C: 4.7

Parameters	Results	Acceptable Level	Units	Date Analyzed	Test Method	Test Type	Test Remarks
Bromodichloromethane	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Bromoform	<0.8	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Chloroform	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Dibromochloromethane	<0.8	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Total Trihalomethanes	<2.6	80	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
Acetone	<10	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Benzene	<0.5	5.0	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
Bromobenzene	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Bromochloromethane	<1.0	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Bromomethane	<2.0	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
n-Butylbenzene	<0.8	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
sec-Butylbenzene	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Tert-Butylbenzene	<0.8	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Carbon disulfide	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Carbon tetrachloride	<0.5	5.0	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
Chloroethane	<1.0	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Chloromethane	<0.8	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
2-Chlorotoluene	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
4-Chlorotoluene	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Dibromomethane	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
1,2-Dichlorobenzene	<0.5	600	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
1,2-Dibromoethane (EDB)	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
1,3-Dichlorobenzene	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
1,4-Dichlorobenzene	<0.5	5.0	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
Dichlorodifluoromethane	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
1,1-Dichloroethane	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
1,2-Dichloroethane	<0.5	5.0	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
1,1-Dichloroethylene	<0.5	7.0	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
cis-1,2-Dichloroethylene	<0.5	70	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
trans-1,2-Dichloroethylene	<0.5	5.0	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
1,2-Dichloropropane	<0.5	5.0	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
1,3-Dichloropropane	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
1,1-Dichloropropene	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
cis-1,3-Dichloropropene	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
trans-1,3-Dichloropropene	<0.5	5.0	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
Diethyl Ether	<1.0	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Diisopropyl ether	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Ethyl tert-Butyl Ether	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". Nitrate is a non-accredited test for noncompliance water samples. This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
Solid samples are reported on a dry weight basis unless noted otherwise.
Subcontract Laboratories: SUB2: Nelson Analytical Maine NH2018 SUB 7: Nelson Analytical EAI Div. NH1007, SUB3: 2062 SUB4:2073/2239, SUB5:NH2530, SUB8:NH2136,
https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 03/06/2023

490 East Industrial Park Drive
Manchester, NH 03109
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(603)622-0200
NH ELAP Accreditation #NH1005

NELSON ANALYTICAL LAB

Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

Customer: Gilford Well Co., Inc.
Client Sample ID: Mountain View Contracting - Harbor Landing, #23-063
Laboratory ID: 123030215.01
Sample Matrix : Drilled Well Water
Sample Location: 10 Bean Road, Moultonborough, NH (Treated - Manganese)

Date Collected: 03/02/2023 10:15 AM
Collected By : J. B.
Date Received : 03/02/2023 04:15 PM
Temperature Rec'd °C: 4.7

Parameters	Results	Acceptable Level	Units	Date Analyzed	Test Method	Test Type	Test Remarks
Hexachlorobutadiene	<0.8	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Isopropylbenzene	<0.8	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
4-Isopropyltoluene	<0.8	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Chlorobenzene	<0.5	100	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
Ethylbenzene	<0.5	700	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
MEK	<5.0	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Methylene chloride	<2.4	5.0	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
MIBK	<5.0	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
MTBE	<0.5	13.0	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
Naphthalene	<0.8	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
n-Propylbenzene	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
2-Hexanone	<5.0	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Styrene	<0.8	100	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
1,1,1,2-Tetrachloroethane	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
1,1,2,2-Tetrachloroethane	<0.8	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
tert-Amyl Methyl Ether	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
tert-Butyl Alcohol	<50	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Tetrachloroethylene	<0.5	5.0	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
Tetrahydrofuran	<10	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Toluene	<0.5	1000	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
1,2,3-trichlorobenzene	<0.8	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
1,2,4-Trichlorobenzene	<0.8	70.0	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
1,1,1-Trichloroethane	<0.5	200	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
1,1,2-Trichloroethane	<0.5	5.0	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
Trichloroethylene	<0.5	5.0	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
Trichlorofluoromethane	<0.5	5.0	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
1,2,3-Trichloropropane	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
1,2,4-Trimethylbenzene	<5.0	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
1,3,5-Trimethylbenzene	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
Vinyl Chloride	<0.9	2.0	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
xylenes (total)	<1.5	10,000	ug/L	03/03/2023 15:23	EPA 524.2	Primary	Within Standard
1,3,5-Trichlorobenzene	<0.5	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit
1,1,2-Trichloro-1,2,2-trifluoroeth	<1.0	NA	ug/L	03/03/2023 15:23	EPA 524.2	N/A	No EPA Limit

'

Test Types: EPA Primary: Regulated by the EPA as a health related parameter

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". Nitrate is a non-accredited test for noncompliance water samples. This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
Solid samples are reported on a dry weight basis unless noted otherwise.
Subcontract Laboratories: SUB2: Nelson Analytical Maine NH2018 SUB 7: Nelson Analytical EAI Div. NH1007, SUB3: 2062 SUB4:2073/2239, SUB5:NH2530, SUB8:NH2136,
https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 03/06/2023

490 East Industrial Park Drive
Manchester, NH 03109
www.nelsonanalytical.com
(603)622-0200
NH ELAP Accreditation #NH1005

NELSON ANALYTICAL LAB

Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

EPA Seconday: Aesthetic parameter - not regarded as a health concern

Respectfully Submitted

Andrew Nelson, Laboratory Director

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Solid samples are reported on a dry weight basis unless noted otherwise.
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https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 03/06/2023

ATTACHMENT A-2
35 BEAN ROAD

490 East Industrial Park Drive
Manchester, NH 03109
www.nelsonanalytical.com
(603)622-0200
NH ELAP Accreditation #NH1005

NELSON ANALYTICAL LAB

Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report Of Analysis

Customer :	**Gilford Well Co., Inc.**	**Date Collected:**	**03/01/2023 12:15 PM**
Client Sample ID:	**Mountain View Contracting - Harbor Landing, #23-064**	**Collected By :**	**A.M.**
Laboratory ID:	**123030108.01**	**Date Received :**	**03/01/2023 04:10 PM**
Sample Matrix :	**Drinking Water**	**Temperature Rec'd°C:**	**#8.4**
Sample Location:	**35 Bean Road, Center Harbor, NH (Untreated)**		

Parameter	Result	Units	Method	Rpt Limit	Q	Date/Time Analyzed	Analyst
Per-and Polyfluoroalkyl Substances-PFAS	See Attached		LC/MS/MS		P5	03/09/2023 14:28	SUB3

P5 ng/L is equivalent to Parts per Trillion (ppt). Analysis was performed by Alpha Analytical NH ELAP 2062. More information regarding PFC's is available on New Hampshire DES's website: https://www4.des.nh.us/nh-pfas-investigation/ The following limits apply to public water systems in the State of New Hampshire: PFHxS 18 ng/L, PFOA 12 ng/L, PFNA 11 ng/L, PFOS 15 ng/L

Respectfully Submitted

Andrew Nelson, Laboratory Director

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". Nitrate is a non-accredited test for noncompliance water samples. This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
Solid samples are reported on a dry weight basis unless noted otherwise.
Subcontract Laboratories: SUB2: Nelson Analytical Maine NH2018 SUB 7: Nelson Analytical EAI Div. NH1007, SUB3: 2062 SUB4:2073/2239, SUB5:NH2530, SUB8:NH2136,
https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 03/13/2023 12:09

ANALYTICAL REPORT

Lab Number:	L2311454
Client:	Nelson Analytical Lab 490 East Industrial Park Dr Manchester, NH 03103
ATTN:	
Phone:	(603) 622-0200
Project Name:	123030108
Project Number:	Not Specified
Report Date:	03/10/23

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

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: 123030108
Project Number: Not Specified

Lab Number: L2311454
Report Date: 03/10/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2311454-01	123030108	DW	Not Specified	03/01/23 12:15	03/06/23

Project Name: 123030108 **Lab Number:** L2311454
Project Number: Not Specified **Report Date:** 03/10/23

Case Narrative

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

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

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

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

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

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

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

Authorized Signature:  Darian Dailey

Title: Technical Director/Representative Date: 03/10/23

ORGANICS

SEMIVOLATILES

Project Name: 123030108 **Lab Number:** L2311454

Project Number: Not Specified **Report Date:** 03/10/23

SAMPLE RESULTS

Lab ID: L2311454-01
Client ID: 123030108
Sample Location: Not Specified

Date Collected: 03/01/23 12:15
Date Received: 03/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 136,533
Analytical Date: 03/09/23 14:28
Analyst: CAP

Extraction Method: EPA 533
Extraction Date: 03/08/23 18:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.00	--	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.00	--	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	3.97		ng/l	2.00	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1

Project Name: 123030108 **Lab Number:** L2311454

Project Number: Not Specified **Report Date:** 03/10/23

SAMPLE RESULTS

Lab ID: L2311454-01 Date Collected: 03/01/23 12:15
Client ID: 123030108 Date Received: 03/06/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	108		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	114		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	101		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	144		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	95		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	95		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	99		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	103		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	140		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	108		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	98		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	106		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	130		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	107		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	113		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	79		50-200

Project Name: 123030108 **Lab Number:** L2311454

Project Number: Not Specified **Report Date:** 03/10/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 136,533
Analytical Date: 03/09/23 10:58
Analyst: CAP

Extraction Method: EPA 533
Extraction Date: 03/08/23 18:02

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab for sample(s): 01 Batch: WG1752215-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.00	--
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.00	--
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.00	--
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	2.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--

Project Name: 123030108 **Lab Number:** L2311454

Project Number: Not Specified **Report Date:** 03/10/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 136,533
Analytical Date: 03/09/23 10:58
Analyst: CAP

Extraction Method: EPA 533
Extraction Date: 03/08/23 18:02

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab for sample(s): 01 Batch: WG1752215-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	111		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	118		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	105		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	115		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	105		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	105		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	116		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	108		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	118		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	121		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	112		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	124		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	127		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	129		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	126		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	98		50-200

Lab Control Sample Analysis

Batch Quality Control

Project Name: 123030108 **Lab Number:** L2311454

Project Number: Not Specified **Report Date:** 03/10/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 Batch: WG1752215-2								
Perfluorobutanoic Acid (PFBA)	100		-		70-130	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	105		-		70-130	-		30
Perfluoropentanoic Acid (PFPeA)	102		-		70-130	-		30
Perfluorobutanesulfonic Acid (PFBS)	94		-		70-130	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	101		-		70-130	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	101		-		70-130	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	93		-		70-130	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	99		-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	110		-		70-130	-		30
Perfluoropentanesulfonic Acid (PFPeS)	93		-		70-130	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	99		-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	105		-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	96		-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	94		-		70-130	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	101		-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	106		-		70-130	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	86		-		70-130	-		30
Perfluorononanoic Acid (PFNA)	104		-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	90		-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	96		-		70-130	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	96		-		70-130	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 123030108 **Lab Number:** L2311454

Project Number: Not Specified **Report Date:** 03/10/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 Batch: WG1752215-2								
Perfluorodecanoic Acid (PFDA)	107		-		70-130	-		30
Perfluoroundecanoic Acid (PFUnA)	108		-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	96		-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	105		-		70-130	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	114				50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	116				50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	107				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	114				50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	104				50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	106				50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	108				50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	112				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	113				50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	118				50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	110				50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	115				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	133				50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	119				50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	126				50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	99				50-200

Matrix Spike Analysis

Batch Quality Control

Project Name: 123030108 **Lab Number:** L2311454

Project Number: Not Specified **Report Date:** 03/10/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1752215-3 QC Sample: L2311172-01 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	ND	38.8	39.7	102		-	-		70-130	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	38.8	39.7	102		-	-		70-130	-		30
Perfluoropentanoic Acid (PFPeA)	ND	38.8	40.5	104		-	-		70-130	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	34.4	30.7	89		-	-		70-130	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	38.8	39.1	101		-	-		70-130	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	34.6	33.9	98		-	-		70-130	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	38.8	37.0	95		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	36.4	39.2	108		-	-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	ND	38.8	44.6	115		-	-		70-130	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	36.4	33.2	91		-	-		70-130	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	38.8	37.6	97		-	-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	ND	38.8	37.9	98		-	-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	35.4	34.2	97		-	-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	36.6	42.6	116		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	36.9	36.0	98		-	-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	ND	38.8	42.6	110		-	-		70-130	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	37	34.6	94		-	-		70-130	-		30
Perfluorononanoic Acid (PFNA)	ND	38.8	40.2	104		-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	36	36.7	102		-	-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	36.2	36.1	100		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	37.2	41.8	112		-	-		70-130	-		30
Perfluorodecanoic Acid (PFDA)	ND	38.8	39.3	101		-	-		70-130	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: 123030108 **Lab Number:** L2311454

Project Number: Not Specified **Report Date:** 03/10/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1752215-3 QC Sample: L2311172-01 Client ID: MS Sample												
Perfluoroundecanoic Acid (PFUnA)	ND	38.8	41.4	107		-	-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	36.6	37.3	102		-	-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	ND	38.8	42.7	110		-	-		70-130	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	120				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	119				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	114				50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	84				50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	112				50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	105				50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	90				50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	98				50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	103				50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	117				50-200
Perfluoro[13C4]Butanoic Acid (MPFBA)	99				50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	108				50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	102				50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	93				50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	101				50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	102				50-200

Lab Duplicate Analysis
Batch Quality Control

Project Name: 123030108
Project Number: Not Specified
Lab Number: L2311454
Report Date: 03/10/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1752215-4 QC Sample: L2311435-01 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	3.25	3.14	ng/l	3		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	ND	ng/l	NC		30
Perfluoropentanoic Acid (PFPeA)	2.59	2.54	ng/l	2		30
Perfluorobutanesulfonic Acid (PFBS)	8.20	8.60	ng/l	5		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	ND	ng/l	NC		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	ND	ng/l	NC		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	2.62	2.92	ng/l	11		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/l	NC		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	2.22	ND	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	1.96	ND	ng/l	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	6.95	7.08	ng/l	2		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	8.05	6.40	ng/l	23		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: 123030108
Project Number: Not Specified
Lab Number: L2311454
Report Date: 03/10/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1752215-4 QC Sample: L2311435-01 Client ID: DUP Sample						
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	100		106		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	107		116		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	111		116		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	149		165		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	90		101		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94		108		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	119		112		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		102		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	147		133		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	104		119		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	102		121		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	107		121		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	129		143		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	116		124		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	118		129		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	83		85		50-200

Project Name: 123030108 **Lab Number:** L2311454

Project Number: Not Specified **Report Date:** 03/10/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2311454-01A	Plastic 250ml Ammonium Acetate preserved	A	NA		3.6	Y	Absent		A2-NH-533(28)
L2311454-01B	Plastic 250ml Ammonium Acetate preserved	A	NA		3.6	Y	Absent		A2-NH-533(28)

*Values in parentheses indicate holding time in days

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA/PFTeDA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS/PFDoS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
Perfluoropropanesulfonic Acid	PFPrS	423-41-6
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA/PFOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: 123030108
Project Number:

Lab Number: L2311454
Report Date: 03/10/23

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
FLUOROTELOMER CARBOXYLIC ACIDS (FTCAs)		
3-Perfluoroheptyl Propanoic Acid	7:3FTCA	812-70-4
2H,2H,3H,3H-Perfluorooctanoic Acid	5:3FTCA	914637-49-3
3-Perfluoropropyl Propanoic Acid	3:3FTCA	356-02-5

Project Name: 123030108 **Lab Number:** L2311454

Project Number: Not Specified **Report Date:** 03/10/23

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

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

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

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

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

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

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

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

Report Format: Data Usability Report

Project Name: 123030108 **Lab Number:** L2311454

Project Number: Not Specified **Report Date:** 03/10/23

Footnotes

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

Terms

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

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

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

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

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

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

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

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

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

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

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

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

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

Report Format: Data Usability Report

Project Name: 123030108 **Lab Number:** L2311454

Project Number: Not Specified **Report Date:** 03/10/23

Data Qualifiers

ND - Not detected at the reporting limit (RL) for the sample.

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: Data Usability Report

Project Name: 123030108 **Lab Number:** L2311454
Project Number: Not Specified **Report Date:** 03/10/23

REFERENCES

136 Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 533, EPA Document 815-B-19-020, November 2019.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

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

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

Westborough Facility:

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

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

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

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

3/6/23

L2311434

NELSON ANALYTICAL LAB

SUBCONTRACTOR SUBMISSION FORM

NELSON ANALYTICAL LAB
490 EAST INDUSTRIAL PARK DRIVE
MANCHESTER, NH 03109
PHONE: 603-622-0200

PAGE ____ OF ____

SUBCONTRACTOR INFORMATION			SAMPLE TYPE	REQUESTED TESTING							
Subcontracted to:		Alpha	DW - Drinking Water WW - Waste Water SW - Surface Water S - Soil O - Other	EPA 533	NH 25 compounds						LABORATORY SAMPLE I.D. NUMBER (LAB USE)
Address											
Contact Person											
Phone / Fax Number											
Sample Date	Sample Time	Sample Description / Identification									
-01 3/1/23	1215	12303010 8	DW	X	X						

Relinquished By (signature)	Date	Time	Received By (signature)
	3/6/23	16:40	J Davis NRL
J. DAVIS NRL	3/6/23	17:00	

Remarks Please Email/Fax Results when complete to: info@nelsonanalytical.com

Samples Iced in transit or preserved per method requirements

3/6/23 1930 3/6/23 1930

FRM-NH-Subcontract Submission Form Blank-01 09/11/2015

3/6/23 2100 3/6/23 2100

490 East Industrial Park Drive
Manchester, NH 03109
www.nelsonanalytical.com
(603)622-0200
NH ELAP Accreditation #NH1005

NELSON ANALYTICAL LAB

Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

Customer: Gilford Well Co., Inc.
Client Sample ID: Mountian View Contracting - Harbor Landing, #23-064
Laboratory ID: 123030107.01
Sample Matrix : Drinking Water
Sample Location: 35 Bean Road, Center Harbor, NH (Untreated)

Date Collected: 03/01/2023 12:15 PM
Collected By : A.M.
Date Received : 03/01/2023 04:10 PM
Temperature Rec'd °C: 8.4

Parameters	Results	Acceptable Level	Units	Date Analyzed	Test Method	Test Type	Test Remarks
Total Coliform Bacteria	Absent	Absent	/100mL	03/01/2023 16:40	SM 9223B	Primary	Within Standard
E. coli Bacteria	Absent	Absent	/100mL	03/01/2023 16:40	SM 9223B	Primary	Within Standard
Bromodichloromethane	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Bromoform	<0.8	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Chloroform	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Dibromochloromethane	<0.8	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Total Trihalomethanes	<2.6	80	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
Acetone	<10	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Benzene	<0.5	5.0	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
Bromobenzene	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Bromochloromethane	<1.0	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Bromomethane	<2.0	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
n-Butylbenzene	<0.8	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
sec-Butylbenzene	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Tert-Butylbenzene	<0.8	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Carbon disulfide	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Carbon tetrachloride	<0.5	5.0	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
Chloroethane	<1.0	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Chloromethane	<0.8	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
2-Chlorotoluene	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
4-Chlorotoluene	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Dibromomethane	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
1,2-Dichlorobenzene	<0.5	600	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
1,2-Dibromoethane (EDB)	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
1,3-Dichlorobenzene	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
1,4-Dichlorobenzene	<0.5	5.0	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
Dichlorodifluoromethane	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
1,1-Dichloroethane	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
1,2-Dichloroethane	<0.5	5.0	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
1,1-Dichloroethylene	<0.5	7.0	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
cis-1,2-Dichloroethylene	<0.5	70	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
trans-1,2-Dichloroethylene	<0.5	5.0	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
1,2-Dichloropropane	<0.5	5.0	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
1,3-Dichloropropane	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
1,1-Dichloropropene	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
cis-1,3-Dichloropropene	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
trans-1,3-Dichloropropene	<0.5	5.0	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
Diethyl Ether	<1.0	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". Nitrate is a non-accredited test for noncompliance water samples. This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
Solid samples are reported on a dry weight basis unless noted otherwise.
Subcontract Laboratories: SUB2: Nelson Analytical Maine NH2018 SUB 7: Nelson Analytical EAI Div. NH1007, SUB3: 2062 SUB4:2073/2239, SUB5:NH2530, SUB8:NH2136,
https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 03/06/2023

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Manchester, NH 03109
www.nelsonanalytical.com
(603)622-0200
NH ELAP Accreditation #NH1005

NELSON ANALYTICAL LAB

Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

Customer: Gilford Well Co., Inc.
Client Sample ID: Mountian View Contracting - Harbor Landing, #23-064
Laboratory ID: 123030107.01
Sample Matrix : Drinking Water
Sample Location: 35 Bean Road, Center Harbor, NH (Untreated)

Date Collected: 03/01/2023 12:15 PM
Collected By : A.M.
Date Received : 03/01/2023 04:10 PM
Temperature Rec'd °C: 8.4

Parameters	Results	Acceptable Level	Units	Date Analyzed	Test Method	Test Type	Test Remarks
Diisopropyl ether	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Ethyl tert-Butyl Ether	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Hexachlorobutadiene	<0.8	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Isopropylbenzene	<0.8	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
4-Isopropyltoluene	<0.8	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Chlorobenzene	<0.5	100	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
Ethylbenzene	<0.5	700	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
MEK	<5.0	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Methylene chloride	<2.4	5.0	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
MIBK	<5.0	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
MTBE	<0.5	13.0	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
Naphthalene	<0.8	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
n-Propylbenzene	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
2-Hexanone	<5.0	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Styrene	<0.8	100	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
1,1,1,2-Tetrachloroethane	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
1,1,2,2-Tetrachloroethane	<0.8	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
tert-Amyl Methyl Ether	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
tert-Butyl Alcohol	<50	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Tetrachloroethylene	<0.5	5.0	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
Tetrahydrofuran	<10	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Toluene	<0.5	1000	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
1,2,3-trichlorobenzene	<0.8	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
1,2,4-Trichlorobenzene	<0.8	70.0	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
1,1,1-Trichloroethane	<0.5	200	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
1,1,2-Trichloroethane	<0.5	5.0	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
Trichloroethylene	<0.5	5.0	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
Trichlorofluoromethane	<0.5	5.0	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
1,2,3-Trichloropropane	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
1,2,4-Trimethylbenzene	<5.0	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
1,3,5-Trimethylbenzene	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
Vinyl Chloride	<0.9	2.0	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
xylenes (total)	<1.5	10,000	ug/L	03/03/2023 14:26	EPA 524.2	Primary	Within Standard
1,3,5-Trichlorobenzene	<0.5	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit
1,1,2-Trichloro-1,2,2-trifluoroeth	<1.0	NA	ug/L	03/03/2023 14:26	EPA 524.2	N/A	No EPA Limit

'

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". Nitrate is a non-accredited test for noncompliance water samples. This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
Solid samples are reported on a dry weight basis unless noted otherwise.
Subcontract Laboratories: SUB2: Nelson Analytical Maine NH2018 SUB 7: Nelson Analytical EAI Div. NH1007, SUB3: 2062 SUB4:2073/2239, SUB5:NH2530, SUB8:NH2136,
https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

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Manchester, NH 03109
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(603)622-0200
NH ELAP Accreditation #NH1005

NELSON ANALYTICAL LAB

Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

Test Types: EPA Primary: Regulated by the EPA as a health related parameter
EPA Seconday: Aesthetic parameter - not regarded as a health concern

Respectfully Submitted

Andrew Nelson, Laboratory Director

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". Nitrate is a non-accredited test for noncompliance water samples. This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
Solid samples are reported on a dry weight basis unless noted otherwise.
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https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 03/06/2023

ATTACHMENT A-3
36 BEAN ROAD

490 East Industrial Park Drive
Manchester, NH 03109
www.nelsonanalytical.com
(603)622-0200
NH ELAP Accreditation #NH1005

NELSON ANALYTICAL LAB

Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

Customer: Gilford Well Co., Inc.
Client Sample ID: Mountain View Contractiong, #22-71
Laboratory ID: 122060336.01
Sample Matrix : Drilled Well Water
Sample Location: Bryan Murphy and Elana Kostk, 36 Bean Road (Pre-Test)

Date Collected: 06/02/2022 08:15 AM
Collected By : J. S.
Date Received : 06/02/2022 04:40 PM
Temperature Rec'd °C: #12.5

Parameters	Results	Acceptable Level	Units	Date Analyzed	Test Method	Test Type	Test Remarks
Arsenic	<0.0010	0.0050	mg/L	06/03/2022 14:32	EPA 200.8	Primary	Within Standard
Iron	**0.993**	0.300	mg/L	06/03/2022 14:32	EPA 200.8	Secondary	**Outside of Standard**
Manganese	<0.010	0.050	mg/L	06/03/2022 14:32	EPA 200.8	Secondary	Within Standard
Total Coliform Bacteria	Absent	Absent	/100mL	06/02/2022 17:15	SM 9223B	Primary	Within Standard
E. coli Bacteria	Absent	Absent	/100mL	06/02/2022 17:15	SM 9223B	Primary	Within Standard
pH	7.15	6.5-8.5	SU	06/03/2022 10:25	SM 4500H B	Secondary	Within Standard
Bromodichloromethane	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Bromoform	<0.8	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Chloroform	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Dibromochloromethane	<0.8	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Total Trihalomethanes	<2.6	80	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
Acetone	<50	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Benzene	<0.5	5.0	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
Bromobenzene	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Bromochloromethane	<1.0	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Bromomethane	<2.0	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
n-Butylbenzene	<0.8	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
sec-Butylbenzene	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Tert-Butylbenzene	<0.8	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Carbon disulfide	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Carbon tetrachloride	<0.5	5.0	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
Chloroethane	<1.0	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Chloromethane	<0.8	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
2-Chlorotoluene	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
4-Chlorotoluene	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Dibromomethane	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
1,2-Dichlorobenzene	<0.5	600	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
1,2-Dibromoethane (EDB)	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
1,3-Dichlorobenzene	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
1,4-Dichlorobenzene	<0.5	5.0	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
Dichlorodifluoromethane	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
1,1-Dichloroethane	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
1,2-Dichloroethane	<0.5	5.0	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
1,1-Dichloroethylene	<0.5	7.0	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
cis-1,2-Dichloroethylene	<0.5	70	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
trans-1,2-Dichloroethylene	<0.5	5.0	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
1,2-Dichloropropane	<0.5	5.0	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
1,3-Dichloropropane	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
1,1-Dichloropropene	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". Nitrate is a non-accredited test for noncompliance water samples. This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
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https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
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Date Reported: 06/09/2022

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Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

Customer: Gilford Well Co., Inc.
Client Sample ID: Mountain View Contractiong, #22-71
Laboratory ID: 122060336.01
Sample Matrix : Drilled Well Water
Sample Location: Bryan Murphy and Elana Kostk, 36 Bean Road (Pre-Test)

Date Collected: 06/02/2022 08:15 AM
Collected By : J. S.
Date Received : 06/02/2022 04:40 PM
Temperature Rec'd °C: #12.5

Parameters	Results	Acceptable Level	Units	Date Analyzed	Test Method	Test Type	Test Remarks
cis-1,3-Dichloropropene	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
trans-1,3-Dichloropropene	<0.5	5.0	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
Diethyl Ether	<1.0	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Diisopropyl ether	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Ethyl tert-Butyl Ether	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Hexachlorobutadiene	<0.8	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Isopropylbenzene	<0.8	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
4-Isopropyltoluene	<0.8	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Chlorobenzene	<0.5	100	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
Ethylbenzene	<0.5	700	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
MEK	<5.0	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Methylene chloride	<2.4	5.0	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
MIBK	<5.0	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
MTBE	<0.5	13.0	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
Naphthalene	<0.8	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
n-Propylbenzene	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
2-Hexanone	<5.0	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Styrene	<0.8	100	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
1,1,1,2-Tetrachloroethane	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
1,1,2,2-Tetrachloroethane	<0.8	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
tert-Amyl Methyl Ether	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
tert-Butyl Alcohol	<50	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Tetrachloroethylene	<0.5	5.0	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
Tetrahydrofuran	<10	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Toluene	<0.5	1000	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
1,2,3-trichlorobenzene	<0.8	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
1,2,4-Trichlorobenzene	<0.8	70.0	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
1,1,1-Trichloroethane	<0.5	200	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
1,1,2-Trichloroethane	<0.5	5.0	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
Trichloroethylene	<0.5	5.0	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
Trichlorofluoromethane	<0.5	5.0	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
1,2,3-Trichloropropane	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
1,2,4-Trimethylbenzene	<5.0	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
1,3,5-Trimethylbenzene	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
Vinyl Chloride	<0.9	2.0	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
xylenes (total)	<1.5	10,000	ug/L	06/08/2022 02:57	EPA 524.2	Primary	Within Standard
1,3,5-Trichlorobenzene	<0.5	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit
1,1,2-Trichloro-1,2,2-trifluoroeth	<1.0	NA	ug/L	06/08/2022 02:57	EPA 524.2	N/A	No EPA Limit

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Massachusetts State Certification #M-NH1005

Report of Analysis

ARSENIC NOTE: The New Hampshire Department of Environmental Services has established a state Maximum Contaminant Level (MCL) for arsenic of 0.005 mg/L, which took effect on July 1, 2021 for all NH public water systems. The federal EPA Safe Drinking Water Act MCL for arsenic is 0.010 mg/L. More information can be found at https://www.des.nh.gov/

Test Types: EPA Primary: Regulated by the EPA as a health related parameter
EPA Seconday: Aesthetic parameter - not regarded as a health concern

Respectfully Submitted

Andrew Nelson, Laboratory Director

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Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report Of Analysis

Customer :	**Gilford Well Co., Inc.**	**Date Collected:**	**03/03/2023 09:45 AM**
Client Sample ID:	**Mountain View Contracting - Harbor Landing**	**Collected By :**	**K.H.**
Laboratory ID:	**123030312.01**	**Date Received :**	**03/03/2023 04:30 PM**
Sample Matrix :	**Drilled Well Water**	**Temperature Rec'd°C:**	**#9.3**
Sample Location:	**36 Bean Road, Moultonborough, NH**		

Parameter	Result	Units	Method	Rpt Limit	Q	Date/Time Analyzed	Analyst
Per-and Polyfluoroalkyl Substances-PFAS	See Attached		LC/MS/MS		P5	03/10/2023 16:06	SUB3

P5 ng/L is equivalent to Parts per Trillion (ppt). Analysis was performed by Alpha Analytical NH ELAP 2062. More information regarding PFC's is available on New Hampshire DES's website: https://www4.des.nh.us/nh-pfas-investigation/ The following limits apply to public water systems in the State of New Hampshire: PFHxS 18 ng/L, PFOA 12 ng/L, PFNA 11 ng/L, PFOS 15 ng/L

Respectfully Submitted

Andrew Nelson, Laboratory Director

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http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 03/15/2023 17:32

ANALYTICAL REPORT

Lab Number:	L2311448
Client:	Nelson Analytical Lab 490 East Industrial Park Dr Manchester, NH 03103
ATTN:	
Phone:	(603) 622-0200
Project Name:	123030312
Project Number:	Not Specified
Report Date:	03/13/23

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

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: 123030312
Project Number: Not Specified

Lab Number: L2311448
Report Date: 03/13/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2311448-01	123030312	DW	Not Specified	03/03/23 09:45	03/06/23

Project Name: 123030312 **Lab Number:** L2311448
Project Number: Not Specified **Report Date:** 03/13/23

Case Narrative

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

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

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

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

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

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

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

Authorized Signature:  Darian Dailey

Title: Technical Director/Representative Date: 03/13/23

ORGANICS

SEMIVOLATILES

Project Name: 123030312 **Lab Number:** L2311448

Project Number: Not Specified **Report Date:** 03/13/23

SAMPLE RESULTS

Lab ID: L2311448-01
Client ID: 123030312
Sample Location: Not Specified

Date Collected: 03/03/23 09:45
Date Received: 03/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 136,533
Analytical Date: 03/10/23 16:06
Analyst: CAP

Extraction Method: EPA 533
Extraction Date: 03/09/23 17:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.00	--	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.00	--	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1

Project Name: 123030312 **Lab Number:** L2311448

Project Number: Not Specified **Report Date:** 03/13/23

SAMPLE RESULTS

Lab ID: L2311448-01 Date Collected: 03/03/23 09:45
Client ID: 123030312 Date Received: 03/06/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	113		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	122		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	112		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	167		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	90		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	88		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	104		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	98		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	147		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	104		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	105		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	105		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	149		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	111		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	115		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	80		50-200

Project Name: 123030312 **Lab Number:** L2311448

Project Number: Not Specified **Report Date:** 03/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 136,533
Analytical Date: 03/10/23 15:31
Analyst: CAP

Extraction Method: EPA 533
Extraction Date: 03/09/23 17:22

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab for sample(s): 01 Batch: WG1752831-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.00	--
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.00	--
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.00	--
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	2.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--

Project Name: 123030312 **Lab Number:** L2311448

Project Number: Not Specified **Report Date:** 03/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 136,533
Analytical Date: 03/10/23 15:31
Analyst: CAP

Extraction Method: EPA 533
Extraction Date: 03/09/23 17:22

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab for sample(s): 01 Batch: WG1752831-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	109		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	121		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	124		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	137		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	103		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	113		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	120		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	113		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	137		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	125		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	126		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	120		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	148		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	132		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	137		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	102		50-200

Lab Control Sample Analysis

Batch Quality Control

Project Name: 123030312 **Lab Number:** L2311448

Project Number: Not Specified **Report Date:** 03/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 Batch: WG1752831-2								
Perfluorobutanoic Acid (PFBA)	93		-		70-130	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	90		-		70-130	-		30
Perfluoropentanoic Acid (PFPeA)	97		-		70-130	-		30
Perfluorobutanesulfonic Acid (PFBS)	88		-		70-130	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	86		-		70-130	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	93		-		70-130	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	80		-		70-130	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	94		-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	101		-		70-130	-		30
Perfluoropentanesulfonic Acid (PFPeS)	84		-		70-130	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	88		-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	96		-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	78		-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	73		-		70-130	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	98		-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	93		-		70-130	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	82		-		70-130	-		30
Perfluorononanoic Acid (PFNA)	95		-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	84		-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	90		-		70-130	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	100		-		70-130	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 123030312 **Lab Number:** L2311448

Project Number: Not Specified **Report Date:** 03/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 Batch: WG1752831-2								
Perfluorodecanoic Acid (PFDA)	86		-		70-130	-		30
Perfluoroundecanoic Acid (PFUnA)	100		-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	89		-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	99		-		70-130	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	68				50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	76				50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	113				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	137				50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	69				50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	78				50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	124				50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	84				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	123				50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	95				50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	116				50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	105				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	140				50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	108				50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	122				50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	59				50-200

Matrix Spike Analysis

Batch Quality Control

Project Name: 123030312 **Lab Number:** L2311448

Project Number: Not Specified **Report Date:** 03/13/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1752831-3 QC Sample: L2311446-01 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	ND	181	176	97		-	-		70-130	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	181	180	99		-	-		70-130	-		30
Perfluoropentanoic Acid (PFPeA)	ND	181	179	99		-	-		70-130	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	161	142	88		-	-		70-130	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	181	175	97		-	-		70-130	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	161	147	91		-	-		70-130	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	181	147	81		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	170	149	88		-	-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	2.89	181	178	97		-	-		70-130	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	170	150	88		-	-		70-130	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	181	157	87		-	-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	ND	181	190	105		-	-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	165	151	92		-	-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	171	151	88		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	172	152	88		-	-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	6.49	181	178	95		-	-		70-130	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	173	174	101		-	-		70-130	-		30
Perfluorononanoic Acid (PFNA)	ND	181	184	102		-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	168	162	96		-	-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	169	174	103		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	174	156	90		-	-		70-130	-		30
Perfluorodecanoic Acid (PFDA)	ND	181	167	92		-	-		70-130	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: 123030312 **Lab Number:** L2311448

Project Number: Not Specified **Report Date:** 03/13/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1752831-3 QC Sample: L2311446-01 Client ID: MS Sample												
Perfluoroundecanoic Acid (PFUnA)	ND	181	182	101		-	-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	171	173	101		-	-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	ND	181	179	99		-	-		70-130	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	164				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	167				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	147				50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	87				50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	115				50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	109				50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	100				50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92				50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	117				50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	124				50-200
Perfluoro[13C4]Butanoic Acid (MPFBA)	97				50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	106				50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	111				50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96				50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	100				50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	120				50-200

Lab Duplicate Analysis
Batch Quality Control

Project Name: 123030312
Project Number: Not Specified
Lab Number: L2311448
Report Date: 03/13/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1752831-4 QC Sample: L2312118-01 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	3.01	2.93	ng/l	3		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	ND	ng/l	NC		30
Perfluoropentanoic Acid (PFPeA)	2.15	2.08	ng/l	3		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/l	NC		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	ND	ng/l	NC		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	ND	ng/l	NC		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	2.27	2.12	ng/l	7		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/l	NC		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/l	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	3.99	3.38	ng/l	17		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	2.08	ng/l	NC		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: 123030312
Project Number: Not Specified
Lab Number: L2311448
Report Date: 03/13/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1752831-4 QC Sample: L2312118-01 Client ID: DUP Sample						
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	108		111		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	114		119		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	103		101		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	179		173		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	92		93		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	96		101		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	104		97		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	102		111		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	173		166		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	114		120		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	113		107		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	119		122		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	159		150		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	119		117		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	128		122		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	84		89		50-200

Project Name: 123030312 **Lab Number:** L2311448

Project Number: Not Specified **Report Date:** 03/13/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2311448-01A	Plastic 250ml Ammonium Acetate preserved	A	NA		3.6	Y	Absent		A2-NH-533(28)
L2311448-01B	Plastic 250ml Ammonium Acetate preserved	A	NA		3.6	Y	Absent		A2-NH-533(28)

*Values in parentheses indicate holding time in days

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA/PFTeDA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS/PFDoS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
Perfluoropropanesulfonic Acid	PFPrS	423-41-6
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA/PFOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: 123030312
Project Number:

Lab Number: L2312448
Report Date: 03/13/23

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
FLUOROTELOMER CARBOXYLIC ACIDS (FTCAs)		
3-Perfluoroheptyl Propanoic Acid	7:3FTCA	812-70-4
2H,2H,3H,3H-Perfluorooctanoic Acid	5:3FTCA	914637-49-3
3-Perfluoropropyl Propanoic Acid	3:3FTCA	356-02-5

Project Name: 123030312 **Lab Number:** L2311448

Project Number: Not Specified **Report Date:** 03/13/23

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

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

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

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

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

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

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

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

Report Format: Data Usability Report

Project Name: 123030312 **Lab Number:** L2311448

Project Number: Not Specified **Report Date:** 03/13/23

Footnotes

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

Terms

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

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

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

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

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

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

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

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

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

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

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

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

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

Report Format: Data Usability Report

Project Name: 123030312 **Lab Number:** L2311448

Project Number: Not Specified **Report Date:** 03/13/23

Data Qualifiers

ND - Not detected at the reporting limit (RL) for the sample.

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: Data Usability Report

Project Name: 123030312 **Lab Number:** L2311448
Project Number: Not Specified **Report Date:** 03/13/23

REFERENCES

136 Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 533, EPA Document 815-B-19-020, November 2019.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

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

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

Westborough Facility:

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

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

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

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

3/6/23

NELSON ANALYTICAL LAB

SUBCONTRACTOR SUBMISSION FORM

NELSON ANALYTICAL LAB
490 EAST INDUSTRIAL PARK DRIVE
MANCHESTER, NH 03109
PHONE: 603-622-0200

PAGE ____ OF ____

SUBCONTRACTOR INFORMATION			SAMPLE TYPE	REQUESTED TESTING							
Subcontracted to:		Alpha	DW - Drinking Water WW - Waste Water SW - Surface Water S - Soil O - Other	EPA 533	NH 25 Combined						LABORATORY SAMPLE I.D. NUMBER (LAB USE)
Address											
Contact Person											
Phone / Fax Number											
Sample Date	Sample Time	Sample Description / Identification									
-01 3/3/23	945	123030312	DW	X	X						

Relinquished By (signature)	Date	Time	Received By (signature)
	3/6/23	10:40	
DRUSHAL	3-6-23	17:00	DRUSHAL

Remarks Please Email/Fax Results when complete to: info@nelsonanalytical.com

Samples Iced in transit or preserved per method requirements

3/6/23 1930 3/6/23 1930

FRM-NH-Subcontract Submission Form Blank-01 09/11/2015

3/6/23 2100 3/6/23 2100

ATTACHMENT A-4
46 BEAN ROAD

490 East Industrial Park Drive
Manchester, NH 03109
www.nelsonanalytical.com
(603)622-0200
NH ELAP Accreditation #NH1005

NELSON ANALYTICAL LAB

Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report Of Analysis

Customer :	**Gilford Well Co., Inc.**	**Date Collected:**	**05/31/2022 08:00 AM**
Client Sample ID:	**Mountain View Contracting, #22-265**	**Collected By :**	**J.S.**
Laboratory ID:	**122052828.01**	**Date Received :**	**05/31/2022 04:40 PM**
Sample Matrix :	**Drilled Well Water**	**Temperature Rec'd°C:**	**#11.8**
Sample Location:	**46 Bean Road, Moultonboro, NH (Untreated)**		

Parameter	Result	Units	Method	Rpt Limit	Q	Date/Time Analyzed	Analyst
Per-and Polyfluoroalkyl Substances-PFAS	See Attached		LC/MS/MS		P5	06/13/2022 15:03	SUB3

P5 ng/L is equivalent to Parts per Trillion (ppt). Analysis was performed by Alpha Analytical NH ELAP 2062. More information regarding PFC's is available on New Hampshire DES's website: https://www4.des.nh.us/nh-pfas-investigation/ The following limits apply to public water systems in the State of New Hampshire: PFHxS 18 ng/L, PFOA 12 ng/L, PFNA 11 ng/L, PFOS 15 ng/L

Respectfully Submitted

Andrew Nelson, Laboratory Director

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". Nitrate is a non-accredited test for noncompliance water samples. This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
Solid samples are reported on a dry weight basis unless noted otherwise.
Subcontract Laboratories: SUB2: Nelson Analytical Maine NH2018 SUB 7: Nelson Analytical EAI Div. NH1007, SUB3: 2062 SUB4:2073/2239, SUB5:NH2530, SUB8:NH2136,
https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 06/21/2022 12:40

ANALYTICAL REPORT

Lab Number:	L2229392
Client:	Nelson Analytical Lab 490 East Industrial Park Dr Manchester, NH 03103
ATTN:	
Phone:	(603) 622-0200
Project Name:	122052828
Project Number:	Not Specified
Report Date:	06/14/22

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

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: 122052828
Project Number: Not Specified

Lab Number: L2229392
Report Date: 06/14/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2229392-01	122052828	DW	Not Specified	05/31/22 08:00	06/03/22

Project Name: 122052828 **Lab Number:** L2229392
Project Number: Not Specified **Report Date:** 06/14/22

Case Narrative

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

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

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

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

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

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

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

Authorized Signature:  Cristin Walker

Title: Technical Director/Representative Date: 06/14/22

ORGANICS

SEMIVOLATILES

Project Name: 122052828 **Lab Number:** L2229392

Project Number: Not Specified **Report Date:** 06/14/22

SAMPLE RESULTS

Lab ID: L2229392-01
Client ID: 122052828
Sample Location: Not Specified

Date Collected: 05/31/22 08:00
Date Received: 06/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 136,533
Analytical Date: 06/13/22 15:03
Analyst: LV

Extraction Method: EPA 533
Extraction Date: 06/12/22 12:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.00	--	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.00	--	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1

Project Name: 122052828 **Lab Number:** L2229392

Project Number: Not Specified **Report Date:** 06/14/22

SAMPLE RESULTS

Lab ID: L2229392-01 Date Collected: 05/31/22 08:00
Client ID: 122052828 Date Received: 06/03/22
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	92		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	84		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	114		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	92		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	92		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	93		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	99		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	94		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	90		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	93		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	89		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	86		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	80		50-200

Project Name: 122052828 **Lab Number:** L2229392

Project Number: Not Specified **Report Date:** 06/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 136,533
Analytical Date: 06/13/22 14:03
Analyst: LV

Extraction Method: EPA 533
Extraction Date: 06/12/22 12:15

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab for sample(s): 01 Batch: WG1649579-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.00	--
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.00	--
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.00	--
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	2.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--

Project Name: 122052828 **Lab Number:** L2229392

Project Number: Not Specified **Report Date:** 06/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 136,533
Analytical Date: 06/13/22 14:03
Analyst: LV

Extraction Method: EPA 533
Extraction Date: 06/12/22 12:15

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab for sample(s): 01 Batch: WG1649579-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	91		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	95		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	91		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	86		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	91		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	87		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	94		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	91		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	91		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	92		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	90		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	91		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	95		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	90		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	89		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	81		50-200

Lab Control Sample Analysis

Batch Quality Control

Project Name: 122052828 **Lab Number:** L2229392

Project Number: Not Specified **Report Date:** 06/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 Batch: WG1649579-2								
Perfluorobutanoic Acid (PFBA)	102		-		70-130	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	107		-		70-130	-		30
Perfluoropentanoic Acid (PFPeA)	110		-		70-130	-		30
Perfluorobutanesulfonic Acid (PFBS)	103		-		70-130	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	108		-		70-130	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	104		-		70-130	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	91		-		70-130	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	107		-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	109		-		70-130	-		30
Perfluoropentanesulfonic Acid (PFPeS)	106		-		70-130	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	104		-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	106		-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	100		-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	114		-		70-130	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	111		-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	110		-		70-130	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	109		-		70-130	-		30
Perfluorononanoic Acid (PFNA)	105		-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	106		-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	110		-		70-130	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	111		-		70-130	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 122052828 **Lab Number:** L2229392

Project Number: Not Specified **Report Date:** 06/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 Batch: WG1649579-2								
Perfluorodecanoic Acid (PFDA)	117		-		70-130	-		30
Perfluoroundecanoic Acid (PFUnA)	108		-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	111		-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	109		-		70-130	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	89				50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	84				50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	97				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	97				50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88				50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	87				50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	92				50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	97				50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	91				50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94				50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	103				50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	94				50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	94				50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	86				50-200

Matrix Spike Analysis

Batch Quality Control

Project Name: 122052828 **Lab Number:** L2229392

Project Number: Not Specified **Report Date:** 06/14/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1649579-3 QC Sample: L2229385-01 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	ND	149	157	105		-	-		70-130	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	149	153	102		-	-		70-130	-		30
Perfluoropentanoic Acid (PFPeA)	ND	149	163	109		-	-		70-130	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	133	145	109		-	-		70-130	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	149	155	104		-	-		70-130	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	133	145	109		-	-		70-130	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	149	180	121		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	140	150	107		-	-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	ND	149	161	108		-	-		70-130	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	140	148	105		-	-		70-130	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	149	155	104		-	-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	ND	149	167	112		-	-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	136	139	102		-	-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	141	147	104		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	142	166	117		-	-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	ND	149	177	119		-	-		70-130	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	142	155	109		-	-		70-130	-		30
Perfluorononanoic Acid (PFNA)	ND	149	163	109		-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	139	136	98		-	-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	140	146	105		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	143	162	113		-	-		70-130	-		30
Perfluorodecanoic Acid (PFDA)	ND	149	161	108		-	-		70-130	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: 122052828 **Lab Number:** L2229392

Project Number: Not Specified **Report Date:** 06/14/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1649579-3 QC Sample: L2229385-01 Client ID: MS Sample												
Perfluoroundecanoic Acid (PFUnA)	ND	149	156	104		-	-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	141	139	99		-	-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	ND	149	166	111		-	-		70-130	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	118				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	113				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	102				50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	78				50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	88				50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89				50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	65				50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	88				50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	85				50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	85				50-200
Perfluoro[13C4]Butanoic Acid (MPFBA)	87				50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	81				50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	85				50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	84				50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	85				50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	85				50-200

Lab Duplicate Analysis
Batch Quality Control

Project Name: 122052828
Project Number: Not Specified
Lab Number: L2229392
Report Date: 06/14/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1649579-4 QC Sample: L2229387-01 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	2.67	2.78	ng/l	4		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	ND	ng/l	NC		30
Perfluoropentanoic Acid (PFPeA)	5.95	5.71	ng/l	4		30
Perfluorobutanesulfonic Acid (PFBS)	7.02	7.13	ng/l	2		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	ND	ng/l	NC		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	ND	ng/l	NC		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	7.41	7.71	ng/l	4		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/l	NC		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	3.70	3.43	ng/l	8		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	2.08	ng/l	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	13.7	13.4	ng/l	2		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	2.53	2.51	ng/l	1		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: 122052828
Project Number: Not Specified
Lab Number: L2229392
Report Date: 06/14/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1649579-4 QC Sample: L2229387-01 Client ID: DUP Sample						
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	87		88		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	74		79		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	83		84		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	117		114		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	85		78		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	86		84		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	89		86		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	88		82		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	99		95		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	90		89		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	87		88		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	85		84		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	92		90		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	88		86		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	88		86		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	78		72		50-200

Project Name: 122052828 **Lab Number:** L2229392

Project Number: Not Specified **Report Date:** 06/14/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2229392-01A	Plastic 250ml Ammonium Acetate preserved	A	NA		3.2	Y	Absent		A2-NH-533(28)
L2229392-01B	Plastic 250ml Ammonium Acetate preserved	A	NA		3.2	Y	Absent		A2-NH-533(28)

*Values in parentheses indicate holding time in days

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

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GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

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

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

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

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

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

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

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

Report Format: Data Usability Report

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Footnotes

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

Terms

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

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

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

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

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

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

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

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

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

Data Qualifiers

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

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

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

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

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where

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Data Qualifiers

the identification is based on a mass spectral library search.

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

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REFERENCES

136 Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 533, EPA Document 815-B-19-020, November 2019.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

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

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

Westborough Facility:

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

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

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

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

NELSON ANALYTICAL LAB

SUBCONTRACTOR SUBMISSION FORM

6/3/22

NELSON ANALYTICAL LAB
490 EAST INDUSTRIAL PARK DRIVE
MANCHESTER, NH 03109
PHONE: 603-622-0200

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SUBCONTRACTOR INFORMATION			SAMPLE TYPE	REQUESTED TESTING							
Subcontracted to: ALPHA			DW - Drinking Water WW - Waste Water SW - Surface Water S - Soil O - Other	EPA 533	NH 25 compounds						LABORATORY SAMPLE I.D. NUMBER (LAB USE)
Address											
Contact Person											
Phone / Fax Number											
Sample Date	Sample Time	Sample Description / Identification									
-01 5/31/22	800	L2205878	DW	X							

Relinquished By (signature)	Date	Time	Received By (signature)
	6/3/22	11:58	W. Randall AAL
W. Randall AAL	6/3/22	18:15	

Remarks Please Email/Fax Results when complete to: info@nelsonanalytical.com

Samples Iced in transit or preserved per method requirements

Well un 6/3/22 19a

W. Randall AAL 6/3/22 19:00

FRM-NH-Subcontract Submission Form Blank-01 09/11/2015

ATTACHMENT A-5
58 BEAN ROAD

490 East Industrial Park Drive
Manchester, NH 03109
www.nelsonanalytical.com
(603)622-0200
NH ELAP Accreditation #NH1005

NELSON ANALYTICAL LAB

Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report Of Analysis

Customer :	**Gilford Well Co., Inc.**	**Date Collected:**	**03/09/2023 09:20 AM**
Client Sample ID:	**Moutain View Contracting - Harbor Landing, #23-065A**	**Collected By :**	**A.M.**
Laboratory ID:	**123030936.01**	**Date Received :**	**03/09/2023 04:00 PM**
Sample Matrix :	**Drinking Water**	**Temperature Rec'd°C:**	**#7.4**
Sample Location:	**58 Bean Road (Untreated)**		

Parameter	Result	Units	Method	Rpt Limit	Q	Date/Time Analyzed	Analyst
Per-and Polyfluoroalkyl Substances-PFAS	See Attached		LC/MS/MS		P5	03/16/2023 16:14	SUB3

P5 ng/L is equivalent to Parts per Trillion (ppt). Analysis was performed by Alpha Analytical NH ELAP 2062. More information regarding PFC's is available on New Hampshire DES's website: https://www4.des.nh.us/nh-pfas-investigation/ The following limits apply to public water systems in the State of New Hampshire: PFHxS 18 ng/L, PFOA 12 ng/L, PFNA 11 ng/L, PFOS 15 ng/L

Respectfully Submitted

Kimberly Wright, Quality Assurance Manager

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". Nitrate is a non-accredited test for noncompliance water samples. This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
Solid samples are reported on a dry weight basis unless noted otherwise.
Subcontract Laboratories: SUB2: Nelson Analytical Maine NH2018 SUB 7: Nelson Analytical EAI Div. NH1007, SUB3: 2062 SUB4:2073/2239, SUB5:NH2530, SUB8:NH2136,
https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 03/23/2023 09:45

ANALYTICAL REPORT

Lab Number:	L2312869
Client:	Nelson Analytical Lab 490 East Industrial Park Dr Manchester, NH 03103
ATTN:	
Phone:	(603) 622-0200
Project Name:	123030936
Project Number:	Not Specified
Report Date:	03/17/23

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

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: 123030936
Project Number: Not Specified

Lab Number: L2312869
Report Date: 03/17/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2312869-01	123030936	DW	Not Specified	03/09/23 09:20	03/10/23

Project Name: 123030936 **Lab Number:** L2312869
Project Number: Not Specified **Report Date:** 03/17/23

Case Narrative

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

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

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

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

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

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

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

Authorized Signature:  Darian Dailey

Title: Technical Director/Representative Date: 03/17/23

ORGANICS

SEMIVOLATILES

Project Name: 123030936 **Lab Number:** L2312869

Project Number: Not Specified **Report Date:** 03/17/23

SAMPLE RESULTS

Lab ID: L2312869-01
Client ID: 123030936
Sample Location: Not Specified

Date Collected: 03/09/23 09:20
Date Received: 03/10/23
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 136,533
Analytical Date: 03/16/23 16:14
Analyst: JPW

Extraction Method: EPA 533
Extraction Date: 03/16/23 07:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.00	--	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.00	--	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	2.24		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1

Project Name: 123030936 **Lab Number:** L2312869

Project Number: Not Specified **Report Date:** 03/17/23

SAMPLE RESULTS

Lab ID: L2312869-01 Date Collected: 03/09/23 09:20
Client ID: 123030936 Date Received: 03/10/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	88		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	86		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	95		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	131		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	74		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	94		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	80		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	114		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	85		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	85		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	127		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	88		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	90		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	75		50-200

Project Name: 123030936 **Lab Number:** L2312869

Project Number: Not Specified **Report Date:** 03/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 136,533
Analytical Date: 03/16/23 15:30
Analyst: JPW

Extraction Method: EPA 533
Extraction Date: 03/16/23 07:50

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab for sample(s): 01 Batch: WG1755181-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.00	--
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.00	--
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.00	--
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	2.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--

Project Name: 123030936 **Lab Number:** L2312869

Project Number: Not Specified **Report Date:** 03/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 136,533
Analytical Date: 03/16/23 15:30
Analyst: JPW

Extraction Method: EPA 533
Extraction Date: 03/16/23 07:50

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab for sample(s): 01 Batch: WG1755181-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	96		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	96		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	100		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	110		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	74		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	99		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	121		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	93		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	92		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	98		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	121		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	98		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	100		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	75		50-200

Lab Control Sample Analysis

Batch Quality Control

Project Name: 123030936 **Lab Number:** L2312869

Project Number: Not Specified **Report Date:** 03/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 Batch: WG1755181-2								
Perfluorobutanoic Acid (PFBA)	106		-		70-130	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	106		-		70-130	-		30
Perfluoropentanoic Acid (PFPeA)	104		-		70-130	-		30
Perfluorobutanesulfonic Acid (PFBS)	102		-		70-130	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	104		-		70-130	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	105		-		70-130	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	95		-		70-130	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	113		-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	116		-		70-130	-		30
Perfluoropentanesulfonic Acid (PFPeS)	101		-		70-130	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	96		-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	126		-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	103		-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	97		-		70-130	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	110		-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	100		-		70-130	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	103		-		70-130	-		30
Perfluorononanoic Acid (PFNA)	111		-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	108		-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	117		-		70-130	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	108		-		70-130	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 123030936 **Lab Number:** L2312869

Project Number: Not Specified **Report Date:** 03/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 Batch: WG1755181-2								
Perfluorodecanoic Acid (PFDA)	103		-		70-130	-		30
Perfluoroundecanoic Acid (PFUnA)	108		-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	116		-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	113		-		70-130	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	94				50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101				50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	105				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	111				50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	89				50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	85				50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	101				50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	99				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	112				50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	99				50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94				50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	106				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	134				50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	111				50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	113				50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	83				50-200

Matrix Spike Analysis

Batch Quality Control

Project Name: 123030936 **Lab Number:** L2312869

Project Number: Not Specified **Report Date:** 03/17/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1755181-3 QC Sample: L2312886-01 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	1.90	172	188	108		-	-		70-130	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	172	162	94		-	-		70-130	-		30
Perfluoropentanoic Acid (PFPeA)	3.36	172	191	109		-	-		70-130	-		30
Perfluorobutanesulfonic Acid (PFBS)	3.25	152	155	100		-	-		70-130	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	172	201	117		-	-		70-130	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	153	152	99		-	-		70-130	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	172	192	112		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	161	166	103		-	-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	4.27	172	200	114		-	-		70-130	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	161	157	97		-	-		70-130	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	172	169	98		-	-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	2.19	172	190	109		-	-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	2.15	156	165	104		-	-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	162	173	107		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	163	170	104		-	-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	8.68	172	208	116		-	-		70-130	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	164	179	109		-	-		70-130	-		30
Perfluorononanoic Acid (PFNA)	ND	172	191	111		-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	4.38	159	173	106		-	-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	160	192	120		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	165	181	110		-	-		70-130	-		30
Perfluorodecanoic Acid (PFDA)	ND	172	180	105		-	-		70-130	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: 123030936 **Lab Number:** L2312869

Project Number: Not Specified **Report Date:** 03/17/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1755181-3 QC Sample: L2312886-01 Client ID: MS Sample												
Perfluoroundecanoic Acid (PFUnA)	ND	172	192	112		-	-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	162	191	118		-	-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	ND	172	198	115		-	-		70-130	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	123				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	141				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	119				50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	92				50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	115				50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	114				50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	96				50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	98				50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	87				50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	117				50-200
Perfluoro[13C4]Butanoic Acid (MPFBA)	101				50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	103				50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	83				50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	95				50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	105				50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	92				50-200

Lab Duplicate Analysis
Batch Quality Control

Project Name: 123030936
Project Number: Not Specified
Lab Number: L2312869
Report Date: 03/17/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1755181-4 QC Sample: L2312887-01 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	ND	ND	ng/l	NC		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	ND	ng/l	NC		30
Perfluoropentanoic Acid (PFPeA)	ND	ND	ng/l	NC		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/l	NC		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	ND	ng/l	NC		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	ND	ng/l	NC		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	ND	ND	ng/l	NC		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/l	NC		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/l	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	ND	ND	ng/l	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ng/l	NC		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: 123030936
Project Number: Not Specified
Lab Number: L2312869
Report Date: 03/17/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1755181-4 QC Sample: L2312887-01 Client ID: DUP Sample						
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	83		76		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	82		75		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	96		84		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	115		104		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	81		**49**	Q	50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	77		52		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	95		79		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	82		53		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	134		93		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	95		66		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		91		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	93		70		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	119		110		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	107		76		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	110		80		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	72		**49**	Q	50-200

Project Name: 123030936 **Lab Number:** L2312869

Project Number: Not Specified **Report Date:** 03/17/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2312869-01A	Plastic 250ml Ammonium Acetate preserved	A	NA		6.0	Y	Absent		A2-NH-533(28)
L2312869-01B	Plastic 250ml Ammonium Acetate preserved	A	NA		6.0	Y	Absent		A2-NH-533(28)

*Values in parentheses indicate holding time in days

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA/PFTeDA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS/PFDoS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
Perfluoropropanesulfonic Acid	PFPrS	423-41-6
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA/PFOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: 123030936
Project Number:

Lab Number: L2312869
Report Date: 03/17/23

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
FLUOROTELOMER CARBOXYLIC ACIDS (FTCAs)		
3-Perfluoroheptyl Propanoic Acid	7:3FTCA	812-70-4
2H,2H,3H,3H-Perfluorooctanoic Acid	5:3FTCA	914637-49-3
3-Perfluoropropyl Propanoic Acid	3:3FTCA	356-02-5

Project Name: 123030936 **Lab Number:** L2312869

Project Number: Not Specified **Report Date:** 03/17/23

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

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

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

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

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

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

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

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

Report Format: Data Usability Report

Project Name: 123030936 **Lab Number:** L2312869

Project Number: Not Specified **Report Date:** 03/17/23

Footnotes

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

Terms

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

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

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

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

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

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

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

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

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

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

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

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

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

Report Format: Data Usability Report

Project Name: 123030936 **Lab Number:** L2312869

Project Number: Not Specified **Report Date:** 03/17/23

Data Qualifiers

ND - Not detected at the reporting limit (RL) for the sample.

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: Data Usability Report

Project Name: 123030936 **Lab Number:** L2312869
Project Number: Not Specified **Report Date:** 03/17/23

REFERENCES

136 Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 533, EPA Document 815-B-19-020, November 2019.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

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

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

Westborough Facility:

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

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

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

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

NELSON ANALYTICAL LAB

SUBCONTRACTOR SUBMISSION FORM

NELSON ANALYTICAL LAB
490 EAST INDUSTRIAL PARK DRIVE
MANCHESTER, NH 03109
PHONE: 603-622-0200

PAGE ____ OF _____

SUBCONTRACTOR INFORMATION			SAMPLE TYPE	REQUESTED TESTING							
Subcontracted to:		alpha	DW - Drinking Water WW - Waste Water SW - Surface Water S - Soil O - Other	EPA 533	1,4 Dioxane SIM						LABORATORY SAMPLE I.D. NUMBER (LAB USE)
Address											
Contact Person											
Phone / Fax Number											
Sample Date	Sample Time	Sample Description / Identification									
3/9/23	920	L2303936	DW	X							

Relinquished By (signature)	Date	Time	Received By (signature)
M. Mill	3/10/23	1645	AAL 3/10/23 1645
AAL	3/10/23		Brijdmin S ADL 3/10 17:41

Remarks Please Email/Fax Results when complete to: info@nelsonanalytical.com

Samples Iced in transit or preserved per method requirements

Brijdmin S ADL 3/10 14:42 R. Mendez 3/10/23 1942

FRM-NH-Subcontract Submission Form Blank-01 09/11/2015

R. Mendez 3/10/23 2103

Sam Aldrich 3/10/23 21:00

ATTACHMENT A-6
6 LAKE SHORE DRIVE

490 East Industrial Park Drive
Manchester, NH 03109
www.nelsonanalytical.com
(603)622-0200
NH ELAP Accreditation #NH1005

NELSON ANALYTICAL LAB

Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

Customer: Gilford Well Co., Inc.
Client Sample ID: Mountain View Contracting, #22-75
Laboratory ID: 122072377.01
Sample Matrix : Drilled Well Water
Sample Location: Hevern Family Rev Trust 2014, 6 Lake Shore Drive

Date Collected: 07/26/2022 08:05 AM
Collected By : Gilford Well
Date Received : 07/26/2022 04:20 PM
Temperature Rec'd °C: #16.3

Parameters	Results	Acceptable Level	Units	Date Analyzed	Test Method	Test Type	Test Remarks
Arsenic	0.0016	0.0050	mg/L	07/27/2022 09:37	EPA 200.8	Primary	Within Standard
Iron	**0.730**	0.300	mg/L	07/27/2022 09:37	EPA 200.8	Secondary	**Outside of Standard**
Manganese	**0.113**	0.050	mg/L	07/27/2022 09:37	EPA 200.8	Secondary	**Outside of Standard**
Total Coliform Bacteria	Absent	Absent	/100mL	07/26/2022 17:10	SM 9223B	Primary	Within Standard
E. coli Bacteria	Absent	Absent	/100mL	07/26/2022 17:10	SM 9223B	Primary	Within Standard
pH	7.45	6.5-8.5	SU	07/26/2022 17:00	SM 4500H B	Secondary	Within Standard
Bromodichloromethane	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Bromoform	<0.8	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Chloroform	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Dibromochloromethane	<0.8	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Total Trihalomethanes	<2.6	80	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
Acetone	<50	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Benzene	<0.5	5.0	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
Bromobenzene	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Bromochloromethane	<1.0	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Bromomethane	<2.0	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
n-Butylbenzene	<0.8	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
sec-Butylbenzene	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Tert-Butylbenzene	<0.8	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Carbon disulfide	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Carbon tetrachloride	<0.5	5.0	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
Chloroethane	<1.0	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Chloromethane	<0.8	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
2-Chlorotoluene	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
4-Chlorotoluene	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Dibromomethane	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
1,2-Dichlorobenzene	<0.5	600	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
1,2-Dibromoethane (EDB)	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
1,3-Dichlorobenzene	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
1,4-Dichlorobenzene	<0.5	5.0	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
Dichlorodifluoromethane	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
1,1-Dichloroethane	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
1,2-Dichloroethane	<0.5	5.0	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
1,1-Dichloroethylene	<0.5	7.0	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
cis-1,2-Dichloroethylene	3.3	70	ug/L	07/29/2022 12:20	EPA 524.2	Primary	Within Standard
trans-1,2-Dichloroethylene	<0.5	5.0	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
1,2-Dichloropropane	<0.5	5.0	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
1,3-Dichloropropane	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
1,1-Dichloropropene	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". Nitrate is a non-accredited test for noncompliance water samples. This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
Solid samples are reported on a dry weight basis unless noted otherwise.
Subcontract Laboratories: SUB2: Nelson Analytical Maine NH2018 SUB 7: Nelson Analytical EAI Div. NH1007, SUB3: 2062 SUB4:2073/2239, SUB5:NH2530, SUB8:NH2136,
https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 08/02/2022

490 East Industrial Park Drive
Manchester, NH 03109
www.nelsonanalytical.com
(603)622-0200
NH ELAP Accreditation #NH1005

NELSON ANALYTICAL LAB

Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

Customer: Gilford Well Co., Inc.
Client Sample ID: Mountain View Contracting, #22-75
Laboratory ID: 122072377.01
Sample Matrix : Drilled Well Water
Sample Location: Hevern Family Rev Trust 2014, 6 Lake Shore Drive

Date Collected: 07/26/2022 08:05 AM
Collected By : Gilford Well
Date Received : 07/26/2022 04:20 PM
Temperature Rec'd °C: #16.3

Parameters	Results	Acceptable Level	Units	Date Analyzed	Test Method	Test Type	Test Remarks
cis-1,3-Dichloropropene	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
trans-1,3-Dichloropropene	<0.5	5.0	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
Diethyl Ether	<1.0	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Diisopropyl ether	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Ethyl tert-Butyl Ether	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Hexachlorobutadiene	<0.8	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Isopropylbenzene	<0.8	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
4-Isopropyltoluene	<0.8	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Chlorobenzene	<0.5	100	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
Ethylbenzene	<0.5	700	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
MEK	<5.0	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Methylene chloride	<2.4	5.0	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
MIBK	<5.0	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
MTBE	2.9	13.0	ug/L	07/29/2022 12:20	EPA 524.2	Primary	Within Standard
Naphthalene	<0.8	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
n-Propylbenzene	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
2-Hexanone	<5.0	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Styrene	<0.8	100	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
1,1,1,2-Tetrachloroethane	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
1,1,2,2-Tetrachloroethane	<0.8	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
tert-Amyl Methyl Ether	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
tert-Butyl Alcohol	<50	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Tetrachloroethylene	<0.5	5.0	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
Tetrahydrofuran	<10	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Toluene	<0.5	1000	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
1,2,3-trichlorobenzene	<0.8	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
1,2,4-Trichlorobenzene	<0.8	70.0	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
1,1,1-Trichloroethane	<0.5	200	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
1,1,2-Trichloroethane	<0.5	5.0	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
Trichloroethylene	3.4	5.0	ug/L	07/29/2022 12:20	EPA 524.2	Primary	Within Standard
Trichlorofluoromethane	<0.5	5.0	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
1,2,3-Trichloropropane	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
1,2,4-Trimethylbenzene	<5.0	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
1,3,5-Trimethylbenzene	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
Vinyl Chloride	<0.9	2.0	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
xylenes (total)	<1.5	10,000	ug/L	07/27/2022 15:59	EPA 524.2	Primary	Within Standard
1,3,5-Trichlorobenzene	<0.5	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit
1,1,2-Trichloro-1,2,2-trifluoroeth	<1.0	NA	ug/L	07/27/2022 15:59	EPA 524.2	N/A	No EPA Limit

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". Nitrate is a non-accredited test for noncompliance water samples. This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
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https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
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NELSON ANALYTICAL LAB

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Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

ARSENIC NOTE: The New Hampshire Department of Environmental Services has established a state Maximum Contaminant Level (MCL) for arsenic of 0.005 mg/L, which took effect on July 1, 2021 for all NH public water systems. The federal EPA Safe Drinking Water Act MCL for arsenic is 0.010 mg/L. More information can be found at https://www.des.nh.gov/

Test Types: EPA Primary: Regulated by the EPA as a health related parameter
EPA Seconday: Aesthetic parameter - not regarded as a health concern

Respectfully Submitted

Andrew Nelson, Laboratory Director

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Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report Of Analysis

Customer :	**Gilford Well Co., Inc.**	**Date Collected:**	**07/26/2022 08:05 AM**
Client Sample ID:	**Mountain View Contracting, #22-75**	**Collected By :**	**Gilford Well**
Laboratory ID:	**122072378.01**	**Date Received :**	**07/26/2022 04:20 PM**
Sample Matrix :	**Drilled Well Water**	**Temperature Rec'd°C:**	**#16.3**
Sample Location:	**Hevern Family Rev Trust 2014, 6 Lake Shore Drive, (Untreated)**		

Parameter	Result	Units	Method	Rpt Limit	Q	Date/Time Analyzed	Analyst
Per-and Polyfluoroalkyl Substances-PFAS	See Attached		LC/MS/MS		P5	08/04/2022 14:28	SUB3

P5 ng/L is equivalent to Parts per Trillion (ppt). Analysis was performed by Alpha Analytical NH ELAP 2062. More information regarding PFC's is available on New Hampshire DES's website: https://www4.des.nh.us/nh-pfas-investigation/ The following limits apply to public water systems in the State of New Hampshire: PFHxS 18 ng/L, PFOA 12 ng/L, PFNA 11 ng/L, PFOS 15 ng/L

Respectfully Submitted

Andrew Nelson, Laboratory Director

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". Nitrate is a non-accredited test for noncompliance water samples. This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
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https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 08/10/2022 16:10

ANALYTICAL REPORT

Lab Number:	L2240738
Client:	Nelson Analytical Lab 490 East Industrial Park Dr Manchester, NH 03103
ATTN:	
Phone:	(603) 622-0200
Project Name:	122072378
Project Number:	Not Specified
Report Date:	08/09/22

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

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: 122072378
Project Number: Not Specified

Lab Number: L2240738
Report Date: 08/09/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2240738-01	122072378	DW	Not Specified	07/26/22 08:05	07/29/22

Project Name: 122072378 **Lab Number:** L2240738
Project Number: Not Specified **Report Date:** 08/09/22

Case Narrative

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

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

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

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

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

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

Project Name: 122072378 **Lab Number:** L2240738
Project Number: Not Specified **Report Date:** 08/09/22

Case Narrative (continued)

Perfluorinated Alkyl Acids by EPA 533

The WG1671010-2 LCS recovery, associated with L2240738-01, is above the acceptance criteria for nonafluoro-3,6-dioxaheptanoic acid (nfdha) (188%), 4,8-dioxa-3h-perfluorononanoic acid (adona) (143%), perfluorononanoic acid (pfna) (135%) and perfluorododecanoic acid (pfdoa) (140%); however, the associated sample is non-detect to the RL for these target analytes. The results of the original analysis are reported.

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

Authorized Signature: Darian Dailey

Title: Technical Director/Representative Date: 08/09/22

ORGANICS

SEMIVOLATILES

Project Name: 122072378 **Lab Number:** L2240738

Project Number: Not Specified **Report Date:** 08/09/22

SAMPLE RESULTS

Lab ID: L2240738-01
Client ID: 122072378
Sample Location: Not Specified

Date Collected: 07/26/22 08:05
Date Received: 07/29/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 136,533
Analytical Date: 08/04/22 14:28
Analyst: AC

Extraction Method: EPA 533
Extraction Date: 08/04/22 03:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	4.99		ng/l	2.00	--	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	8.01		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	3.40		ng/l	2.00	--	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.00	--	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.00	--	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	10.1		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	18.8		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	24.5		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1

Project Name: 122072378 **Lab Number:** L2240738

Project Number: Not Specified **Report Date:** 08/09/22

SAMPLE RESULTS

Lab ID: L2240738-01 Date Collected: 07/26/22 08:05
Client ID: 122072378 Date Received: 07/29/22
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	96		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	81		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	97		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	119		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	94		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	95		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	95		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	105		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	87		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	96		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	98		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	102		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	88		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	97		50-200

Project Name: 122072378 **Lab Number:** L2240738

Project Number: Not Specified **Report Date:** 08/09/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 136,533
Analytical Date: 08/04/22 11:42
Analyst: AC

Extraction Method: EPA 533
Extraction Date: 08/04/22 03:35

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab for sample(s): 01 Batch: WG1671010-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.00	--
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.00	--
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.00	--
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	2.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--

Project Name: 122072378 **Lab Number:** L2240738

Project Number: Not Specified **Report Date:** 08/09/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 136,533
Analytical Date: 08/04/22 11:42
Analyst: AC

Extraction Method: EPA 533
Extraction Date: 08/04/22 03:35

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab for sample(s): 01 Batch: WG1671010-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	96		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	82		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	95		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	86		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	93		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	93		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	81		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	86		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	88		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	97		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	98		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	91		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	100		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	92		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	106		50-200

Lab Control Sample Analysis

Batch Quality Control

Project Name: 122072378 **Lab Number:** L2240738

Project Number: Not Specified **Report Date:** 08/09/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 Batch: WG1671010-2								
Perfluorobutanoic Acid (PFBA)	117		-		70-130	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	106		-		70-130	-		30
Perfluoropentanoic Acid (PFPeA)	125		-		70-130	-		30
Perfluorobutanesulfonic Acid (PFBS)	110		-		70-130	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	113		-		70-130	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	122		-		70-130	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	**188**	Q	-		70-130	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	125		-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	125		-		70-130	-		30
Perfluoropentanesulfonic Acid (PFPeS)	116		-		70-130	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	124		-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	128		-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	116		-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	**143**	Q	-		70-130	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	115		-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	128		-		70-130	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	111		-		70-130	-		30
Perfluorononanoic Acid (PFNA)	**135**	Q	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	110		-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	122		-		70-130	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	124		-		70-130	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 122072378 **Lab Number:** L2240738

Project Number: Not Specified **Report Date:** 08/09/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 Batch: WG1671010-2								
Perfluorodecanoic Acid (PFDA)	126		-		70-130	-		30
Perfluoroundecanoic Acid (PFUnA)	127		-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	112		-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	**140**	Q	-		70-130	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	98				50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	81				50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	100				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	98				50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	98				50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	99				50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	92				50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	93				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	95				50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	92				50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	97				50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	105				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	98				50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	104				50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	93				50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	112				50-200

Matrix Spike Analysis

Batch Quality Control

Project Name: 122072378 **Lab Number:** L2240738

Project Number: Not Specified **Report Date:** 08/09/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1671010-3 QC Sample: L2240708-01 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	ND	150	176	117		-	-		70-130	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	150	163	109		-	-		70-130	-		30
Perfluoropentanoic Acid (PFPeA)	ND	150	189	126		-	-		70-130	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	133	154	115		-	-		70-130	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	150	178	119		-	-		70-130	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	134	168	125		-	-		70-130	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	150	287	**191**	Q	-	-		70-130	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	141	175	124		-	-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	ND	150	201	**134**	Q	-	-		70-130	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	141	179	127		-	-		70-130	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	150	189	126		-	-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	ND	150	193	129		-	-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	137	158	115		-	-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	142	199	**140**	Q	-	-		70-130	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	143	173	121		-	-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	ND	150	195	130		-	-		70-130	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	143	156	109		-	-		70-130	-		30
Perfluorononanoic Acid (PFNA)	ND	150	204	**136**	Q	-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	139	154	111		-	-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	140	174	124		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	144	184	128		-	-		70-130	-		30
Perfluorodecanoic Acid (PFDA)	ND	150	210	**140**	Q	-	-		70-130	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: 122072378 **Lab Number:** L2240738

Project Number: Not Specified **Report Date:** 08/09/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1671010-3 QC Sample: L2240708-01 Client ID: MS Sample												
Perfluoroundecanoic Acid (PFUnA)	ND	150	203	**135**	Q	-	-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	142	158	111		-	-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	ND	150	204	**136**	Q	-	-		70-130	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	105				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	99				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	94				50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	112				50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	100				50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	98				50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	101				50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	98				50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	95				50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	99				50-200
Perfluoro[13C4]Butanoic Acid (MPFBA)	98				50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	79				50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	97				50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	94				50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	95				50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	101				50-200

Lab Duplicate Analysis
Batch Quality Control

Project Name: 122072378
Project Number: Not Specified
Lab Number: L2240738
Report Date: 08/09/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1671010-4 QC Sample: L2240709-01 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	8.52	8.55	ng/l	0		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	ND	ng/l	NC		30
Perfluoropentanoic Acid (PFPeA)	31.6	30.9	ng/l	2		30
Perfluorobutanesulfonic Acid (PFBS)	4.30	4.26	ng/l	1		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	ND	ng/l	NC		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	ND	ng/l	NC		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	41.6	39.7	ng/l	5		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/l	NC		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/l	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	6.84	6.04	ng/l	12		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ng/l	NC		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: 122072378
Project Number: Not Specified
Lab Number: L2240738
Report Date: 08/09/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1671010-4 QC Sample: L2240709-01 Client ID: DUP Sample						
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	101		101		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	85		87		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	100		100		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	102		102		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	97		106		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	103		104		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	93		97		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	88		98		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	92		101		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	98		102		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93		88		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	104		107		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	99		99		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	97		104		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	97		99		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	105		116		50-200

Project Name: 122072378 **Lab Number:** L2240738

Project Number: Not Specified **Report Date:** 08/09/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2240738-01A	Plastic 250ml Ammonium Acetate preserved	A	NA		3.2	Y	Absent		A2-NH-533(28)
L2240738-01B	Plastic 250ml Ammonium Acetate preserved	A	NA		3.2	Y	Absent		A2-NH-533(28)

*Values in parentheses indicate holding time in days

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: 122072378 **Lab Number:** L2240738

Project Number: Not Specified **Report Date:** 08/09/22

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

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

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

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

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

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

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

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

Report Format: Data Usability Report

Project Name:	122072378	**Lab Number:**	L2240738
Project Number:	Not Specified	**Report Date:**	08/09/22

Footnotes

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

Terms

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

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

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

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

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

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

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

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

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

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

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

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

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

Report Format: Data Usability Report

Project Name: 122072378 **Lab Number:** L2240738

Project Number: Not Specified **Report Date:** 08/09/22

Data Qualifiers

ND - Not detected at the reporting limit (RL) for the sample.

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: Data Usability Report

Project Name: 122072378 **Lab Number:** L2240738
Project Number: Not Specified **Report Date:** 08/09/22

REFERENCES

136 Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 533, EPA Document 815-B-19-020, November 2019.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

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

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

Westborough Facility:

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

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

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

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

NELSON ANALYTICAL LAB

SUBCONTRACTOR SUBMISSION FORM

L2240738

NELSON ANALYTICAL LAB
490 EAST INDUSTRIAL PARK DRIVE
MANCHESTER, NH 03109
PHONE: 603-622-0200

PAGE ____ OF ____

SUBCONTRACTOR INFORMATION			SAMPLE TYPE	REQUESTED TESTING							
Subcontracted to:		Alpha	DW - Drinking Water WW - Waste Water SW - Surface Water S - Soil O - Other	EPA 533	NH 25T Compounds						LABORATORY SAMPLE I.D. NUMBER (LAB USE)
Address											
Contact Person											
Phone / Fax Number											
Sample Date	Sample Time	Sample Description / Identification									
7/26/22	805	L2207237 S	DW	X							

Relinquished By (signature)	Date	Time	Received By (signature)
	7/29/22	1028	AAL
AAL	7/29/22	1415	

Remarks Please Email/Fax Results when complete to: info@nelsonanalytical.com

Samples Iced in transit or preserved per method requirements

Ruby Fortuna 15:15 7.29.22 MCM . 7/29/22 1515
MCM 7/29/22 1630 DSC 7/29/22 16:30

FRM-NH-Subcontract Submission Form Blank-01 09/11/2015

ATTACHMENT A-7
18 LAKE SHORE DRIVE

490 East Industrial Park Drive
Manchester, NH 03109
www.nelsonanalytical.com
(603)622-0200
NH ELAP Accreditation #NH1005

NELSON ANALYTICAL LAB

Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

Customer: Gilford Well Co., Inc.
Client Sample ID: Mountain View Contracting - Harbor Landing, #23-067
Laboratory ID: 123030213.01
Sample Matrix : Drilled Well Water
Sample Location: 18 Lake Shore Road, Moultonborough, NH (Untreated)

Date Collected: 03/02/2023 11:09 AM
Collected By : J. B.
Date Received : 03/02/2023 04:15 PM
Temperature Rec'd °C: 4.7

Parameters	Results	Acceptable Level	Units	Date Analyzed	Test Method	Test Type	Test Remarks
Bromodichloromethane	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Bromoform	<0.8	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Chloroform	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Dibromochloromethane	<0.8	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Total Trihalomethanes	<2.6	80	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
Acetone	<10	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Benzene	<0.5	5.0	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
Bromobenzene	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Bromochloromethane	<1.0	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Bromomethane	<2.0	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
n-Butylbenzene	<0.8	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
sec-Butylbenzene	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Tert-Butylbenzene	<0.8	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Carbon disulfide	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Carbon tetrachloride	<0.5	5.0	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
Chloroethane	<1.0	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Chloromethane	<0.8	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
2-Chlorotoluene	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
4-Chlorotoluene	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Dibromomethane	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
1,2-Dichlorobenzene	<0.5	600	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
1,2-Dibromoethane (EDB)	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
1,3-Dichlorobenzene	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
1,4-Dichlorobenzene	<0.5	5.0	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
Dichlorodifluoromethane	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
1,1-Dichloroethane	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
1,2-Dichloroethane	<0.5	5.0	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
1,1-Dichloroethylene	<0.5	7.0	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
cis-1,2-Dichloroethylene	<0.5	70	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
trans-1,2-Dichloroethylene	<0.5	5.0	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
1,2-Dichloropropane	<0.5	5.0	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
1,3-Dichloropropane	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
1,1-Dichloropropene	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
cis-1,3-Dichloropropene	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
trans-1,3-Dichloropropene	<0.5	5.0	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
Diethyl Ether	<1.0	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Diisopropyl ether	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Ethyl tert-Butyl Ether	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". Nitrate is a non-accredited test for noncompliance water samples. This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
Solid samples are reported on a dry weight basis unless noted otherwise.
Subcontract Laboratories: SUB2: Nelson Analytical Maine NH2018 SUB 7: Nelson Analytical EAI Div. NH1007, SUB3: 2062 SUB4:2073/2239, SUB5:NH2530, SUB8:NH2136,
https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 03/06/2023

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Report of Analysis

Customer: Gilford Well Co., Inc.
Client Sample ID: Mountain View Contracting - Harbor Landing, #23-067
Laboratory ID: 123030213.01
Sample Matrix : Drilled Well Water
Sample Location: 18 Lake Shore Road, Moultonborough, NH (Untreated)

Date Collected: 03/02/2023 11:09 AM
Collected By : J. B.
Date Received : 03/02/2023 04:15 PM
Temperature Rec'd °C: 4.7

Parameters	Results	Acceptable Level	Units	Date Analyzed	Test Method	Test Type	Test Remarks
Hexachlorobutadiene	<0.8	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Isopropylbenzene	<0.8	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
4-Isopropyltoluene	<0.8	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Chlorobenzene	<0.5	100	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
Ethylbenzene	<0.5	700	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
MEK	<5.0	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Methylene chloride	<2.4	5.0	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
MIBK	<5.0	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
MTBE	<0.5	13.0	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
Naphthalene	<0.8	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
n-Propylbenzene	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
2-Hexanone	<5.0	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Styrene	<0.8	100	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
1,1,1,2-Tetrachloroethane	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
1,1,2,2-Tetrachloroethane	<0.8	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
tert-Amyl Methyl Ether	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
tert-Butyl Alcohol	<50	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Tetrachloroethylene	<0.5	5.0	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
Tetrahydrofuran	<10	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Toluene	<0.5	1000	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
1,2,3-trichlorobenzene	<0.8	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
1,2,4-Trichlorobenzene	<0.8	70.0	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
1,1,1-Trichloroethane	<0.5	200	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
1,1,2-Trichloroethane	<0.5	5.0	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
Trichloroethylene	<0.5	5.0	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
Trichlorofluoromethane	<0.5	5.0	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
1,2,3-Trichloropropane	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
1,2,4-Trimethylbenzene	<5.0	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
1,3,5-Trimethylbenzene	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
Vinyl Chloride	<0.9	2.0	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
xylenes (total)	<1.5	10,000	ug/L	03/03/2023 14:54	EPA 524.2	Primary	Within Standard
1,3,5-Trichlorobenzene	<0.5	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit
1,1,2-Trichloro-1,2,2-trifluoroeth	<1.0	NA	ug/L	03/03/2023 14:54	EPA 524.2	N/A	No EPA Limit

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Test Types: EPA Primary: Regulated by the EPA as a health related parameter

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". Nitrate is a non-accredited test for noncompliance water samples. This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
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https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
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Date Reported: 03/06/2023

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Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

EPA Seconday: Aesthetic parameter - not regarded as a health concern

Respectfully Submitted

Andrew Nelson, Laboratory Director

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Report Of Analysis

Customer :	**Gilford Well Co., Inc.**	**Date Collected:**	**03/02/2023 11:09 AM**
Client Sample ID:	**Mountain View Contracting - Harbor Landing, #23-067**	**Collected By :**	**J. B.**
Laboratory ID:	**123030214.01**	**Date Received :**	**03/02/2023 04:15 PM**
Sample Matrix :	**Drilled Well Water**	**Temperature Rec'd°C:**	**4.7**
Sample Location:	**18 Lake Shore Drive, Moultonborough, NH (Untreated)**		

Parameter	Result	Units	Method	Rpt Limit	Q	Date/Time Analyzed	Analyst
Per-and Polyfluoroalkyl Substances-PFAS	See Attached		LC/MS/MS		P5	03/10/2023 16:32	SUB3

P5 ng/L is equivalent to Parts per Trillion (ppt). Analysis was performed by Alpha Analytical NH ELAP 2062. More information regarding PFC's is available on New Hampshire DES's website: https://www4.des.nh.us/nh-pfas-investigation/ The following limits apply to public water systems in the State of New Hampshire: PFHxS 18 ng/L, PFOA 12 ng/L, PFNA 11 ng/L, PFOS 15 ng/L

Respectfully Submitted

Andrew Nelson, Laboratory Director

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https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 03/15/2023 17:32

ANALYTICAL REPORT

Lab Number:	L2311452
Client:	Nelson Analytical Lab 490 East Industrial Park Dr Manchester, NH 03103
ATTN:	
Phone:	(603) 622-0200
Project Name:	123030214
Project Number:	Not Specified
Report Date:	03/13/23

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

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: 123030214
Project Number: Not Specified

Lab Number: L2311452
Report Date: 03/13/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2311452-01	123030214	DW	Not Specified	03/02/23 11:09	03/06/23

Project Name: 123030214 **Lab Number:** L2311452
Project Number: Not Specified **Report Date:** 03/13/23

Case Narrative

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

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

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

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

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

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

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

Authorized Signature: Darian Dailey

Title: Technical Director/Representative Date: 03/13/23

ORGANICS

SEMIVOLATILES

Project Name: 123030214 **Lab Number:** L2311452

Project Number: Not Specified **Report Date:** 03/13/23

SAMPLE RESULTS

Lab ID: L2311452-01
Client ID: 123030214
Sample Location: Not Specified

Date Collected: 03/02/23 11:09
Date Received: 03/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 136,533
Analytical Date: 03/10/23 16:32
Analyst: CAP

Extraction Method: EPA 533
Extraction Date: 03/09/23 17:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	5.72		ng/l	2.00	--	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	7.92		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	3.60		ng/l	2.00	--	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.00	--	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.00	--	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	10.4		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	14.1		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	19.6		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1

Project Name: 123030214 **Lab Number:** L2311452

Project Number: Not Specified **Report Date:** 03/13/23

SAMPLE RESULTS

Lab ID: L2311452-01 Date Collected: 03/02/23 11:09
Client ID: 123030214 Date Received: 03/06/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	96		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	99		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	93		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	142		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	86		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	84		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	92		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	136		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	94		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	92		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	99		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	118		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	107		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	118		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	86		50-200

Project Name: 123030214 **Lab Number:** L2311452

Project Number: Not Specified **Report Date:** 03/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 136,533
Analytical Date: 03/10/23 15:31
Analyst: CAP

Extraction Method: EPA 533
Extraction Date: 03/09/23 17:22

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab for sample(s): 01 Batch: WG1752831-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.00	--
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.00	--
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.00	--
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	2.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--

Project Name: 123030214 **Lab Number:** L2311452

Project Number: Not Specified **Report Date:** 03/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 136,533
Analytical Date: 03/10/23 15:31
Analyst: CAP

Extraction Method: EPA 533
Extraction Date: 03/09/23 17:22

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab for sample(s): 01 Batch: WG1752831-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	109		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	121		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	124		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	137		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	103		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	113		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	120		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	113		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	137		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	125		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	126		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	120		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	148		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	132		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	137		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	102		50-200

Lab Control Sample Analysis

Batch Quality Control

Project Name: 123030214 **Lab Number:** L2311452

Project Number: Not Specified **Report Date:** 03/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 Batch: WG1752831-2								
Perfluorobutanoic Acid (PFBA)	93		-		70-130	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	90		-		70-130	-		30
Perfluoropentanoic Acid (PFPeA)	97		-		70-130	-		30
Perfluorobutanesulfonic Acid (PFBS)	88		-		70-130	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	86		-		70-130	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	93		-		70-130	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	80		-		70-130	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	94		-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	101		-		70-130	-		30
Perfluoropentanesulfonic Acid (PFPeS)	84		-		70-130	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	88		-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	96		-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	78		-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	73		-		70-130	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	98		-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	93		-		70-130	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	82		-		70-130	-		30
Perfluorononanoic Acid (PFNA)	95		-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	84		-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	90		-		70-130	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	100		-		70-130	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 123030214 **Lab Number:** L2311452

Project Number: Not Specified **Report Date:** 03/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 Batch: WG1752831-2								
Perfluorodecanoic Acid (PFDA)	86		-		70-130	-		30
Perfluoroundecanoic Acid (PFUnA)	100		-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	89		-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	99		-		70-130	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	68				50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	76				50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	113				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	137				50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	69				50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	78				50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	124				50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	84				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	123				50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	95				50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	116				50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	105				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	140				50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	108				50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	122				50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	59				50-200

Matrix Spike Analysis

Batch Quality Control

Project Name: 123030214 **Lab Number:** L2311452

Project Number: Not Specified **Report Date:** 03/13/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1752831-3 QC Sample: L2311446-01 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	ND	181	176	97		-	-		70-130	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	181	180	99		-	-		70-130	-		30
Perfluoropentanoic Acid (PFPeA)	ND	181	179	99		-	-		70-130	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	161	142	88		-	-		70-130	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	181	175	97		-	-		70-130	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	161	147	91		-	-		70-130	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	181	147	81		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	170	149	88		-	-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	2.89	181	178	97		-	-		70-130	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	170	150	88		-	-		70-130	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	181	157	87		-	-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	ND	181	190	105		-	-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	165	151	92		-	-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	171	151	88		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	172	152	88		-	-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	6.49	181	178	95		-	-		70-130	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	173	174	101		-	-		70-130	-		30
Perfluorononanoic Acid (PFNA)	ND	181	184	102		-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	168	162	96		-	-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	169	174	103		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	174	156	90		-	-		70-130	-		30
Perfluorodecanoic Acid (PFDA)	ND	181	167	92		-	-		70-130	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: 123030214 **Lab Number:** L2311452

Project Number: Not Specified **Report Date:** 03/13/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1752831-3 QC Sample: L2311446-01 Client ID: MS Sample												
Perfluoroundecanoic Acid (PFUnA)	ND	181	182	101		-	-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	171	173	101		-	-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	ND	181	179	99		-	-		70-130	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	164				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	167				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	147				50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	87				50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	115				50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	109				50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	100				50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92				50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	117				50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	124				50-200
Perfluoro[13C4]Butanoic Acid (MPFBA)	97				50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	106				50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	111				50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96				50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	100				50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	120				50-200

Lab Duplicate Analysis
Batch Quality Control

Project Name: 123030214
Project Number: Not Specified
Lab Number: L2311452
Report Date: 03/13/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1752831-4 QC Sample: L2312118-01 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	3.01	2.93	ng/l	3		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	ND	ng/l	NC		30
Perfluoropentanoic Acid (PFPeA)	2.15	2.08	ng/l	3		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/l	NC		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	ND	ng/l	NC		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	ND	ng/l	NC		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	2.27	2.12	ng/l	7		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/l	NC		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/l	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	3.99	3.38	ng/l	17		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	2.08	ng/l	NC		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: 123030214
Project Number: Not Specified
Lab Number: L2311452
Report Date: 03/13/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1752831-4 QC Sample: L2312118-01 Client ID: DUP Sample						
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	108		111		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	114		119		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	103		101		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	179		173		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	92		93		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	96		101		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	104		97		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	102		111		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	173		166		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	114		120		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	113		107		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	119		122		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	159		150		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	119		117		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	128		122		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	84		89		50-200

Project Name: 123030214 **Lab Number:** L2311452

Project Number: Not Specified **Report Date:** 03/13/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2311452-01A	Plastic 250ml Ammonium Acetate preserved	A	NA		3.6	Y	Absent		A2-NH-533(28)
L2311452-01B	Plastic 250ml Ammonium Acetate preserved	A	NA		3.6	Y	Absent		A2-NH-533(28)

*Values in parentheses indicate holding time in days

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA/PFTeDA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS/PFDoS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
Perfluoropropanesulfonic Acid	PFPrS	423-41-6
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA/PFOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: 123030214 **Lab Number:** L2314452

Project Number: **Report Date:** 03/13/23

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
FLUOROTELOMER CARBOXYLIC ACIDS (FTCAs)		
3-Perfluoroheptyl Propanoic Acid	7:3FTCA	812-70-4
2H,2H,3H,3H-Perfluorooctanoic Acid	5:3FTCA	914637-49-3
3-Perfluoropropyl Propanoic Acid	3:3FTCA	356-02-5

Project Name: 123030214 **Lab Number:** L2311452

Project Number: Not Specified **Report Date:** 03/13/23

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

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

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

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

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

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

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

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

Report Format: Data Usability Report

Project Name: 123030214 **Lab Number:** L2311452

Project Number: Not Specified **Report Date:** 03/13/23

Footnotes

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

Terms

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

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

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

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

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

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

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

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

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

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

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

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

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

Report Format: Data Usability Report

Project Name: 123030214 **Lab Number:** L2311452

Project Number: Not Specified **Report Date:** 03/13/23

Data Qualifiers

ND - Not detected at the reporting limit (RL) for the sample.

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: Data Usability Report

Project Name: 123030214 **Lab Number:** L2311452
Project Number: Not Specified **Report Date:** 03/13/23

REFERENCES

136 Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 533, EPA Document 815-B-19-020, November 2019.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

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

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

Westborough Facility:

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

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

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

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

3/6/23

L23 11452

NELSON ANALYTICAL LAB

SUBCONTRACTOR SUBMISSION FORM

NELSON ANALYTICAL LAB
490 EAST INDUSTRIAL PARK DRIVE
MANCHESTER, NH 03109
PHONE: 603-622-0200

PAGE ____ OF ____

SUBCONTRACTOR INFORMATION			SAMPLE TYPE	REQUESTED TESTING							
Subcontracted to:		Alpha	DW - Drinking Water WW - Waste Water SW - Surface Water S - Soil O - Other	EPA 533	NH 35 COMPOUNDS						LABORATORY SAMPLE I.D. NUMBER (LAB USE)
Address											
Contact Person											
Phone / Fax Number											
Sample Date	Sample Time	Sample Description / Identification									
3/2/23	1109	123030214	DW	X	X						

Relinquished By (signature)	Date	Time	Received By (signature)
M. Mu	3/6/23	10:40	DAVIS RAL
DAVIS RAL	3/6/23	17:00	

Remarks Please Email/Fax Results when complete to: info@nelsonanalytical.com

Samples Iced in transit or preserved per method requirements

3/6/23 1930 3/6/23 1930

FRM-NH-Subcontract Submission Form Blank-01 09/11/2015

3/6/23 2100 3/6/23 2100

ATTACHMENT A-8
12 MAIN STREET

The State of New Hampshire
Department of Environmental Services

Robert R. Scott, Commissioner

Owner/Responsible Party:
DAVID KRUMSIEK
SENTERS MARKET CONDO ASSOC
14 THATCHER ST
WESTWOOD, MA 02090
Via email:
dkrumsiek@pkcounsel.com

NOTICE OF VIOLATION
Immediate Action Required

Public Water System:
SENTERS MARKET CONDOS
PWS ID: 0396020
Location: CENTER HARBOR

Date Issued: March 9, 2023

The New Hampshire Department of Environmental Services ("NHDES") records indicate that the water samples results submitted in the monitoring period listed below exceeded a Maximum Contaminant Level ("MCL") for drinking water. The following violation has occurred:

Exceedance: Perfluorooctanoic Acid (PFOA) Site ID: 501
Violation of NH Admin. Rule: Env-Dw 712

Contaminant	MCL	Date Collected	Quarter / Compliance Period	Results for the Past 12 months (most recent first)	Running Annual Average
Perfluorooctanoic Acid (PFOA)	12 ng/L	1/5/2023	Quarter 1-2023	8.12 ng/L, 17 ng/L, 21.5 ng/L, 12.9 ng/L	15 ng/L
Perfluorooctanoic Acid (PFOA)	12 ng/L	10/17/2022	Quarter 4-2022	17 ng/L, 21.5 ng/L, 12.9 ng/L, 20.8 ng/L, 22.5 ng/L	19 ng/L

Required Actions

Action	When	Rule Citation
1. Perform Public Notice	Within 30 days of the date of this notice	Env-Dw 801
2. Certify that public notice was performed	Within 10 days of performing public notice	Env-Dw 801

You can access much of your public water system's information (including the sampling schedule and results) plus any needed forms on the NHDES OneStop. Simply click here and enter the PWSID. The necessary public notice template can be found here, then click "Download Mail-In Form".

Once NHDES receives the written documentation requested above, NHDES records will be updated and the violation will be closed. Further violations or failure to complete the required actions listed above may result in NHDES issuing a Letter of Deficiency, Administrative Order, seeking an Administrative Fine up to $4,000 per violation, and/or referring the system to the N.H. Department of Justice. Any further enforcement actions taken by the Department may be posted on the NHDES website for a period of five years.

Please contact me if you have any questions.

Issued by: Tricia Madore

Tricia Madore
Monitoring Section
dwmonitoring@des.nh.gov
(603) 271-3907
Drinking Water and Groundwater Bureau

ec: Town of CENTER HARBOR, Health Officer
NORMAN HARRIS III, Primary Operator
NORMAN HARRIS III, Primary Contact

NELSON ANALYTICAL LAB
490 EAST INDUSTRIAL PARK DRIVE
MANCHESTER NH 03109
Phone: (603) 622-0200
Fax:

ANALYTICAL RESULTS

Batch ID/Form: 123041371.01 - CHEMICAL MONITORING **Submitting Lab ID:** 1005

PWS ID/Name: 0396020 - SENTERS MARKET CONDOS - CENTER HARBOR **Report Date:** 04/27/2023

Collector: J. BUCKNER **Phone:** 603-524-6343 **Collect Date:** 04/13/2023 08:27:00

Lab Sample ID: 123041371.01 **Matrix:** WATER **Received:** 04/13/2023 16:20:00

Sample Location ID: 501 **Sample Type:** ROUTINE-SAMPLE **Compliance Period:** Q2 2023

Description: PH/SOURCE TAP/NEW BLEND 003 001 **Receipt Temp.:** 11.2 C

Analyte	Results	Units	RDL	DF	Prepared Date	Analysis Date	Analyte Code	Analyst	Qual.
Analytical Method: 10091619					**Analyzing Lab: 2062-ALPHA ANALYTICAL (MANSFIELD) [#2062]**				
PERFLUOROHEXANE SULFONIC ACID - PFHXS	ND	NG/L	2		04/18/2023 00:00:00	04/18/2023 15:02:00	355-46-4		
PERFLUORONONANOIC ACID - PFNA	ND	NG/L	2		04/18/2023 00:00:00	04/18/2023 15:02:00	375-95-1		
PERFLUOROOCTANE SULFONIC ACID - PFOS	ND	NG/L	2		04/18/2023 00:00:00	04/18/2023 15:02:00	1763-23-1		
PERFLUOROOCTANOIC ACID - PFOA	11.5	NG/L	2		04/18/2023 00:00:00	04/18/2023 15:02:00	335-67-1		

This report is derived from the original 'Report of Laboratory Analysis' and is not intended as a replacement.

NELSON ANALYTICAL LAB
490 EAST INDUSTRIAL PARK DRIVE
MANCHESTER NH 03109
Phone: (603) 622-0200
Fax:

ANALYTICAL RESULTS

Batch ID/Form: 122101698.01 - CHEMICAL MONITORING **Submitting Lab ID:** 1005

PWS ID/Name: 0396020 - SENTERS MARKET CONDOS - CENTER HARBOR **Report Date:** 10/27/2022

Collector: J. BUCKNER **Phone:** 603-524-6343 **Collect Date:** 10/17/2022 12:30:00

Lab Sample ID: 122101698.01 **Matrix:** WATER **Received:** 10/17/2022 16:30:00

Sample Location ID: 501 **Sample Type:** ROUTINE-SAMPLE **Compliance Period:** Q4 2022

Description: PH/SOURCE TAP/NEW BLEND 003 001 **Receipt Temp.:** 6.7 C

Analyte	Results	Units	RDL	DF	Prepared Date	Analysis Date	Analyte Code	Analyst	Qual.
Analytical Method: 10088809			**Analyzing Lab: 1005-NELSON ANALYTICAL LLC**						
1,1,1,2-TETRACHLOROETHANE	ND	UG/L	.5			10/21/2022 18:57:00	5105		
1,1,1-TRICHLOROETHANE	ND	UG/L	.5			10/21/2022 18:57:00	5160		
1,1,2,2-TETRACHLOROETHANE	ND	UG/L	.8			10/21/2022 18:57:00	5110		
1,1,2-TRICHLOROETHANE	ND	UG/L	.5			10/21/2022 18:57:00	5165		
1,1-DICHLOROETHANE	ND	UG/L	.5			10/21/2022 18:57:00	4630		
1,1-DICHLOROETHYLENE	ND	UG/L	.5			10/21/2022 18:57:00	4640		
1,1-DICHLOROPROPENE	ND	UG/L	.5			10/21/2022 18:57:00	4670		
1,2,3-TRICHLOROBENZENE	ND	UG/L	.8			10/21/2022 18:57:00	5150		
1,2,3-TRICHLOROPROPANE	ND	UG/L	.5			10/21/2022 18:57:00	5180		
1,2,4-TRICHLOROBENZENE	ND	UG/L	.8			10/21/2022 18:57:00	5155		
1,2,4-TRIMETHYLBENZENE	ND	UG/L	5			10/21/2022 18:57:00	5210		
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	ND	UG/L	.5			10/21/2022 18:57:00	4610		
1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	ND	UG/L	.5			10/21/2022 18:57:00	4635		
1,2-DICHLOROPROPANE	ND	UG/L	.5			10/21/2022 18:57:00	4655		
1,3,5-TRIMETHYLBENZENE	ND	UG/L	.5			10/21/2022 18:57:00	5215		
1,3-DICHLOROBENZENE (M-DICHLOROBENZNE)	ND	UG/L	.5			10/21/2022 18:57:00	4615		
1,3-DICHLOROPROPANE	ND	UG/L	.5			10/21/2022 18:57:00	4660		
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	ND	UG/L	.5			10/21/2022 18:57:00	4620		
2-CHLOROTOLUENE	ND	UG/L	.5			10/21/2022 18:57:00	4535		

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NELSON ANALYTICAL LAB
490 EAST INDUSTRIAL PARK DRIVE
MANCHESTER NH 03109
Phone: (603) 622-0200
Fax:

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

ANALYTICAL RESULTS

Batch ID/Form: 122101698.01 - CHEMICAL MONITORING **Submitting Lab ID:** 1005

PWS ID/Name: 0396020 - SENTERS MARKET CONDOS - CENTER HARBOR **Report Date:** 10/27/2022

Collector: J. BUCKNER **Phone:** 603-524-6343 **Collect Date:** 10/17/2022 12:30:00

Lab Sample ID: 122101698.01 **Matrix:** WATER **Received:** 10/17/2022 16:30:00

Sample Location ID: 501 **Sample Type:** ROUTINE-SAMPLE **Compliance Period:** Q4 2022

Description: PH/SOURCE TAP/NEW BLEND 003 001 **Receipt Temp.:** 6.7 C

Analyte	Results	Units	RDL	DF	Prepared Date	Analysis Date	Analyte Code	Analyst	Qual.
Analytical Method: 10088809		**Analyzing Lab: 1005-NELSON ANALYTICAL LLC**							
2-HEXANONE	ND	UG/L	5			10/21/2022 18:57:00	4860		
4-CHLOROTOLUENE	ND	UG/L	.5			10/21/2022 18:57:00	4540		
4-ISOPROPYLTOLUENE (P-CYMENE)	ND	UG/L	.8			10/21/2022 18:57:00	4910		
ACETONE	ND	UG/L	50			10/21/2022 18:57:00	4315		
BENZENE	ND	UG/L	.5			10/21/2022 18:57:00	4375		
BROMOBENZENE	ND	UG/L	.5			10/21/2022 18:57:00	4385		
BROMOCHLOROMETHANE	ND	UG/L	1			10/21/2022 18:57:00	4390		
BROMODICHLOROMETHANE	ND	UG/L	.5			10/21/2022 18:57:00	4395		
BROMOFORM	ND	UG/L	.8			10/21/2022 18:57:00	4400		
CARBON DISULFIDE	ND	UG/L	.5			10/21/2022 18:57:00	4450		
CARBON TETRACHLORIDE	ND	UG/L	.5			10/21/2022 18:57:00	4455		
CHLOROBENZENE	ND	UG/L	.5			10/21/2022 18:57:00	4475		
CHLORODIBROMOMETHANE	ND	UG/L	.8			10/21/2022 18:57:00	4575		
CHLOROETHANE (ETHYL CHLORIDE)	ND	UG/L	1			10/21/2022 18:57:00	4485		
CHLOROFORM	ND	UG/L	.5			10/21/2022 18:57:00	4505		
CIS-1,2-DICHLOROETHYLENE	ND	UG/L	.5			10/21/2022 18:57:00	4645		
CIS-1,3-DICHLOROPROPENE	ND	UG/L	.5			10/21/2022 18:57:00	4680		
DI-ISOPROPYLETHER (DIPE)	ND	UG/L	.5			10/21/2022 18:57:00	9375		
DIBROMOMETHANE (METHYLENE BROMIDE)	ND	UG/L	.5			10/21/2022 18:57:00	4595		

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NEW HAMPSHIRE DEPARTMENT OF Environmental Services

ANALYTICAL RESULTS

Batch ID/Form: 122101698.01 - CHEMICAL MONITORING **Submitting Lab ID:** 1005

PWS ID/Name: 0396020 - SENTERS MARKET CONDOS - CENTER HARBOR **Report Date:** 10/27/2022

Collector: J. BUCKNER **Phone:** 603-524-6343 **Collect Date:** 10/17/2022 12:30:00

Lab Sample ID: 122101698.01 **Matrix:** WATER **Received:** 10/17/2022 16:30:00

Sample Location ID: 501 **Sample Type:** ROUTINE-SAMPLE **Compliance Period:** Q4 2022

Description: PH/SOURCE TAP/NEW BLEND 003 001 **Receipt Temp.:** 6.7 C

Analyte	Results	Units	RDL	DF	Prepared Date	Analysis Date	Analyte Code	Analyst	Qual.
Analytical Method: 10088809		**Analyzing Lab: 1005-NELSON ANALYTICAL LLC**							
DICHLORODIFLUOROMETHANE (FREON-12)	ND	UG/L	.5			10/21/2022 18:57:00	4625		
DIETHYL ETHER	ND	UG/L	1			10/21/2022 18:57:00	4725		
ETHYL-T-BUTYLETHER (ETBE) (2-ETHOXY-2-METHYLPROPANE)	ND	UG/L	.5			10/21/2022 18:57:00	4770		
ETHYLBENZENE	ND	UG/L	.5			10/21/2022 18:57:00	4765		
HEXACHLOROBUTADIENE	ND	UG/L	.8			10/21/2022 18:57:00	4835		
ISOPROPYLBENZENE	ND	UG/L	.8			10/21/2022 18:57:00	4900		
METHYL BROMIDE (BROMOMETHANE)	ND	UG/L	2			10/21/2022 18:57:00	4950		
METHYL CHLORIDE (CHLOROMETHANE)	ND	UG/L	.8			10/21/2022 18:57:00	4960		
METHYL TERT-BUTYL ETHER (MTBE)	ND	UG/L	.5			10/21/2022 18:57:00	5000		
METHYLENE CHLORIDE (DICHLOROMETHANE)	ND	UG/L	2.4			10/21/2022 18:57:00	4975		
N-BUTYLBENZENE	ND	UG/L	.8			10/21/2022 18:57:00	4435		
N-PROPYLBENZENE	ND	UG/L	.5			10/21/2022 18:57:00	5090		
NAPHTHALENE	ND	UG/L	.8			10/21/2022 18:57:00	5005		
SEC-BUTYLBENZENE	ND	UG/L	.5			10/21/2022 18:57:00	4440		
STYRENE	ND	UG/L	.8			10/21/2022 18:57:00	5100		
TERT-AMYL METHYL ETHER (TAME)	ND	UG/L	.5			10/21/2022 18:57:00	4370		
TERT-BUTYL ALCOHOL (2-METHYL-2-PROPANOL)	ND	UG/L	50			10/21/2022 18:57:00	4420		
TERT-BUTYLBENZENE	ND	UG/L	.8			10/21/2022 18:57:00	4445		
TETRACHLOROETHYLENE (PERCHLOROETHYLENE)	ND	UG/L	.5			10/21/2022 18:57:00	5115		

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ANALYTICAL RESULTS

Batch ID/Form: 122101698.01 - CHEMICAL MONITORING **Submitting Lab ID:** 1005

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Collector: J. BUCKNER **Phone:** 603-524-6343 **Collect Date:** 10/17/2022 12:30:00

Lab Sample ID: 122101698.01 **Matrix:** WATER **Received:** 10/17/2022 16:30:00

Sample Location ID: 501 **Sample Type:** ROUTINE-SAMPLE **Compliance Period:** Q4 2022

Description: PH/SOURCE TAP/NEW BLEND 003 001 **Receipt Temp.:** 6.7 C

Analyte	Results	Units	RDL	DF	Prepared Date	Analysis Date	Analyte Code	Analyst	Qual.
Analytical Method: 10088809			**Analyzing Lab: 1005-NELSON ANALYTICAL LLC**						
TETRAHYDROFURAN (THF)	ND	UG/L	10			10/21/2022 18:57:00	5120		
TOLUENE	ND	UG/L	.5			10/21/2022 18:57:00	5140		
TOTAL TRIHALOMETHANES (TTHMS)	ND	UG/L	2.6			10/21/2022 18:57:00	5205		
TRANS-1,2-DICHLOROETHYLENE	ND	UG/L	.5			10/21/2022 18:57:00	4700		
TRANS-1,3-DICHLOROPROPYLENE	ND	UG/L	.5			10/21/2022 18:57:00	4685		
TRICHLOROETHENE (TRICHLOROETHYLENE)	ND	UG/L	.5			10/21/2022 18:57:00	5170		
TRICHLOROFLUOROMETHANE (FLUOROTRICHLOROMETHANE, FREON 11)	ND	UG/L	.5			10/21/2022 18:57:00	5175		
VINYL CHLORIDE (CHLOROETHENE)	ND	UG/L	.9			10/21/2022 18:57:00	5235		
XYLENE (TOTAL)	ND	UG/L	1.5			10/21/2022 18:57:00	5260		

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ATTACHMENT A-9
319 WHITTIER HIGHWAY

490 East Industrial Park Drive
Manchester, NH 03109
www.nelsonanalytical.com
(603)622-0200
NH ELAP Accreditation #NH1005

NELSON ANALYTICAL LAB

Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

Customer: Gilford Well Co., Inc.
Client Sample ID: Mountain View Contracting, #22-82
Laboratory ID: 122072375.01
Sample Matrix : Drilled Well Water
Sample Location: Maxfield Porperty Holdings, 319 Whittier Highway (Untreated)

Date Collected: 07/26/2022 09:10 AM
Collected By : Gilford Well
Date Received : 07/26/2022 04:20 PM
Temperature Rec'd °C: #16.3

Parameters	Results	Acceptable Level	Units	Date Analyzed	Test Method	Test Type	Test Remarks
Arsenic	<0.0010	0.0050	mg/L	07/27/2022 08:55	EPA 200.8	Primary	Within Standard
Iron	**0.530**	0.300	mg/L	07/27/2022 08:55	EPA 200.8	Secondary	**Outside of Standard**
Manganese	<0.010	0.050	mg/L	07/27/2022 08:55	EPA 200.8	Secondary	Within Standard
Total Coliform Bacteria	Absent	Absent	/100mL	07/26/2022 17:10	SM 9223B	Primary	Within Standard
E. coli Bacteria	Absent	Absent	/100mL	07/26/2022 17:10	SM 9223B	Primary	Within Standard
pH	6.55	6.5-8.5	SU	07/26/2022 17:00	SM 4500H B	Secondary	Within Standard
Bromodichloromethane	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Bromoform	<0.8	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Chloroform	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Dibromochloromethane	<0.8	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Total Trihalomethanes	<2.6	80	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
Acetone	<50	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Benzene	<0.5	5.0	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
Bromobenzene	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Bromochloromethane	<1.0	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Bromomethane	<2.0	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
n-Butylbenzene	<0.8	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
sec-Butylbenzene	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Tert-Butylbenzene	<0.8	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Carbon disulfide	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Carbon tetrachloride	<0.5	5.0	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
Chloroethane	<1.0	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Chloromethane	<0.8	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
2-Chlorotoluene	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
4-Chlorotoluene	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Dibromomethane	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
1,2-Dichlorobenzene	<0.5	600	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
1,2-Dibromoethane (EDB)	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
1,3-Dichlorobenzene	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
1,4-Dichlorobenzene	<0.5	5.0	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
Dichlorodifluoromethane	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
1,1-Dichloroethane	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
1,2-Dichloroethane	<0.5	5.0	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
1,1-Dichloroethylene	<0.5	7.0	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
cis-1,2-Dichloroethylene	<0.5	70	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
trans-1,2-Dichloroethylene	<0.5	5.0	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
1,2-Dichloropropane	<0.5	5.0	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
1,3-Dichloropropane	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
1,1-Dichloropropene	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". Nitrate is a non-accredited test for noncompliance water samples. This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
Solid samples are reported on a dry weight basis unless noted otherwise.
Subcontract Laboratories: SUB2: Nelson Analytical Maine NH2018 SUB 7: Nelson Analytical EAI Div. NH1007, SUB3: 2062 SUB4:2073/2239, SUB5:NH2530, SUB8:NH2136,
https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 07/28/2022

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NH ELAP Accreditation #NH1005

NELSON ANALYTICAL LAB

Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

Customer: Gilford Well Co., Inc.
Client Sample ID: Mountain View Contracting, #22-82
Laboratory ID: 122072375.01
Sample Matrix : Drilled Well Water
Sample Location: Maxfield Porperty Holdings, 319 Whittier Highway (Untreated)

Date Collected: 07/26/2022 09:10 AM
Collected By : Gilford Well
Date Received : 07/26/2022 04:20 PM
Temperature Rec'd °C: #16.3

Parameters	Results	Acceptable Level	Units	Date Analyzed	Test Method	Test Type	Test Remarks
cis-1,3-Dichloropropene	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
trans-1,3-Dichloropropene	<0.5	5.0	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
Diethyl Ether	<1.0	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Diisopropyl ether	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Ethyl tert-Butyl Ether	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Hexachlorobutadiene	<0.8	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Isopropylbenzene	<0.8	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
4-Isopropyltoluene	<0.8	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Chlorobenzene	<0.5	100	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
Ethylbenzene	<0.5	700	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
MEK	<5.0	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Methylene chloride	<2.4	5.0	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
MIBK	<5.0	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
MTBE	<0.5	13.0	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
Naphthalene	<0.8	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
n-Propylbenzene	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
2-Hexanone	<5.0	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Styrene	<0.8	100	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
1,1,1,2-Tetrachloroethane	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
1,1,2,2-Tetrachloroethane	<0.8	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
tert-Amyl Methyl Ether	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
tert-Butyl Alcohol	<50	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Tetrachloroethylene	<0.5	5.0	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
Tetrahydrofuran	<10	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Toluene	<0.5	1000	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
1,2,3-trichlorobenzene	<0.8	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
1,2,4-Trichlorobenzene	<0.8	70.0	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
1,1,1-Trichloroethane	<0.5	200	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
1,1,2-Trichloroethane	<0.5	5.0	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
Trichloroethylene	<0.5	5.0	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
Trichlorofluoromethane	<0.5	5.0	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
1,2,3-Trichloropropane	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
1,2,4-Trimethylbenzene	<5.0	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
1,3,5-Trimethylbenzene	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
Vinyl Chloride	<0.9	2.0	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
xylenes (total)	<1.5	10,000	ug/L	07/27/2022 15:00	EPA 524.2	Primary	Within Standard
1,3,5-Trichlorobenzene	<0.5	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit
1,1,2-Trichloro-1,2,2-trifluoroeth	<1.0	NA	ug/L	07/27/2022 15:00	EPA 524.2	N/A	No EPA Limit

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". Nitrate is a non-accredited test for noncompliance water samples. This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
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Subcontract Laboratories: SUB2: Nelson Analytical Maine NH2018 SUB 7: Nelson Analytical EAI Div. NH1007, SUB3: 2062 SUB4:2073/2239, SUB5:NH2530, SUB8:NH2136,
https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 07/28/2022

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NH ELAP Accreditation #NH1005

NELSON ANALYTICAL LAB

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Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

ARSENIC NOTE: The New Hampshire Department of Environmental Services has established a state Maximum Contaminant Level (MCL) for arsenic of 0.005 mg/L, which took effect on July 1, 2021 for all NH public water systems. The federal EPA Safe Drinking Water Act MCL for arsenic is 0.010 mg/L. More information can be found at https://www.des.nh.gov/

Test Types: EPA Primary: Regulated by the EPA as a health related parameter
EPA Seconday: Aesthetic parameter - not regarded as a health concern

Respectfully Submitted

Andrew Nelson, Laboratory Director

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Manchester, NH 03109
www.nelsonanalytical.com
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Massachusetts State Certification #M-NH1005

Report Of Analysis

Customer :	**Gilford Well Co., Inc.**	**Date Collected:**	**07/26/2022 09:10 AM**
Client Sample ID:	**Mountain View Contracting, #22-82**	**Collected By :**	**Gilford Well**
Laboratory ID:	**122072376.01**	**Date Received :**	**07/26/2022 04:20 PM**
Sample Matrix :	**Drilled Well Water**	**Temperature Rec'd°C:**	**#16.3**
Sample Location:	**Maxfield Property Holdings, 319 Whittier Highway, (Untreated)**		

Parameter	Result	Units	Method	Rpt Limit	Q	Date/Time Analyzed	Analyst
Per-and Polyfluoroalkyl Substances-PFAS	See Attached		LC/MS/MS		P5	08/08/2022 18:08	SUB3

P5 ng/L is equivalent to Parts per Trillion (ppt). Analysis was performed by Alpha Analytical NH ELAP 2062. More information regarding PFC's is available on New Hampshire DES's website: https://www4.des.nh.us/nh-pfas-investigation/ The following limits apply to public water systems in the State of New Hampshire: PFHxS 18 ng/L, PFOA 12 ng/L, PFNA 11 ng/L, PFOS 15 ng/L

Respectfully Submitted

Kimberly Wright, Quality Assurance Manager

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". Nitrate is a non-accredited test for noncompliance water samples. This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
Solid samples are reported on a dry weight basis unless noted otherwise.
Subcontract Laboratories: SUB2: Nelson Analytical Maine NH2018 SUB 7: Nelson Analytical EAI Div. NH1007, SUB3: 2062 SUB4:2073/2239, SUB5:NH2530, SUB8:NH2136,
https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 08/16/2022 11:14

ANALYTICAL REPORT

Lab Number:	L2240737
Client:	Nelson Analytical Lab 490 East Industrial Park Dr Manchester, NH 03103
ATTN:	
Phone:	(603) 622-0200
Project Name:	122072376
Project Number:	Not Specified
Report Date:	08/12/22

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

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: 122072376
Project Number: Not Specified

Lab Number: L2240737
Report Date: 08/12/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2240737-01	122072376	DW	Not Specified	07/26/22 09:10	07/29/22

Project Name: 122072376 **Lab Number:** L2240737
Project Number: Not Specified **Report Date:** 08/12/22

Case Narrative

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

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

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

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

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

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

Project Name: 122072376 **Lab Number:** L2240737
Project Number: Not Specified **Report Date:** 08/12/22

Case Narrative (continued)

Perfluorinated Alkyl Acids by EPA 533

L2240737-01RE: The sample was re-extracted within holding time due to QC failures in the original extraction. The results of the re-extraction are reported.

The WG1671966-2 LCS recovery, associated with L2240737-01RE, is above the acceptance criteria for nonafluoro-3,6-dioxaheptanoic acid (nfdha) (145%); however, the associated sample is non-detect to the RL for this target analyte. The results of the original analysis are reported.

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

Authorized Signature: Darian Dailey

Title: Technical Director/Representative Date: 08/12/22

ORGANICS

SEMIVOLATILES

Project Name: 122072376 **Lab Number:** L2240737

Project Number: Not Specified **Report Date:** 08/12/22

SAMPLE RESULTS

Lab ID: L2240737-01 RE
Client ID: 122072376
Sample Location: Not Specified

Date Collected: 07/26/22 09:10
Date Received: 07/29/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 136,533
Analytical Date: 08/08/22 18:08
Analyst: SL

Extraction Method: EPA 533
Extraction Date: 08/06/22 06:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	7.00		ng/l	2.00	--	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	17.5		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	5.59		ng/l	2.00	--	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.00	--	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.00	--	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	11.9		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	9.30		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	15.7		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	2.37		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	7.12		ng/l	2.00	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1

Project Name: 122072376 **Lab Number:** L2240737

Project Number: Not Specified **Report Date:** 08/12/22

SAMPLE RESULTS

Lab ID: L2240737-01 RE
Client ID: 122072376
Sample Location: Not Specified

Date Collected: 07/26/22 09:10
Date Received: 07/29/22
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	94		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	72		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	89		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	144		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	84		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	80		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	91		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	79		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	116		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	90		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	102		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	89		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	78		50-200

Project Name: 122072376 **Lab Number:** L2240737

Project Number: Not Specified **Report Date:** 08/12/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 136,533
Analytical Date: 08/08/22 17:51
Analyst: SL

Extraction Method: EPA 533
Extraction Date: 08/06/22 06:25

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab for sample(s): 01 Batch: WG1671966-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.00	--
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.00	--
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.00	--
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	2.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--

Project Name: 122072376 **Lab Number:** L2240737

Project Number: Not Specified **Report Date:** 08/12/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 136,533
Analytical Date: 08/08/22 17:51
Analyst: SL

Extraction Method: EPA 533
Extraction Date: 08/06/22 06:25

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab for sample(s): 01 Batch: WG1671966-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	86		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	76		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	96		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	110		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	99		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	106		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	106		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	93		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	90		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	99		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	105		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	109		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	116		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	103		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	99		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	105		50-200

Lab Control Sample Analysis

Batch Quality Control

Project Name: 122072376 **Lab Number:** L2240737

Project Number: Not Specified **Report Date:** 08/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 Batch: WG1671966-2								
Perfluorobutanoic Acid (PFBA)	105		-		70-130	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	95		-		70-130	-		30
Perfluoropentanoic Acid (PFPeA)	114		-		70-130	-		30
Perfluorobutanesulfonic Acid (PFBS)	111		-		70-130	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	108		-		70-130	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	119		-		70-130	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	**145**	Q	-		70-130	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	115		-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	111		-		70-130	-		30
Perfluoropentanesulfonic Acid (PFPeS)	110		-		70-130	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	113		-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	111		-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	106		-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	127		-		70-130	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	109		-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	122		-		70-130	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	100		-		70-130	-		30
Perfluorononanoic Acid (PFNA)	113		-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	98		-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	116		-		70-130	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	113		-		70-130	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 122072376 **Lab Number:** L2240737

Project Number: Not Specified **Report Date:** 08/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 Batch: WG1671966-2								
Perfluorodecanoic Acid (PFDA)	118		-		70-130	-		30
Perfluoroundecanoic Acid (PFUnA)	121		-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	104		-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	122		-		70-130	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	86				50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	75				50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	99				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	109				50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	96				50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	100				50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	95				50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	87				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	100				50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	93				50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	96				50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	103				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	117				50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	98				50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	95				50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	88				50-200

Matrix Spike Analysis

Batch Quality Control

Project Name: 122072376 **Lab Number:** L2240737

Project Number: Not Specified **Report Date:** 08/12/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1671966-3 QC Sample: L2241487-01 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	2.24	36.1	40.6	106		-	-		70-130	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	36.1	30.7	85		-	-		70-130	-		30
Perfluoropentanoic Acid (PFPeA)	3.23	36.1	45.5	117		-	-		70-130	-		30
Perfluorobutanesulfonic Acid (PFBS)	2.38	32	35.0	102		-	-		70-130	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	36.1	39.8	110		-	-		70-130	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	32.2	35.5	110		-	-		70-130	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	36.1	58.0	**161**	Q	-	-		70-130	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	33.8	39.5	117		-	-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	3.69	36.1	45.5	116		-	-		70-130	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	33.9	34.6	102		-	-		70-130	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	36.1	41.3	114		-	-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	2.34	36.1	46.5	122		-	-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	32.9	34.9	106		-	-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	34.1	45.4	**133**	Q	-	-		70-130	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	34.4	38.9	113		-	-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	8.20	36.1	53.4	125		-	-		70-130	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	34.4	33.0	96		-	-		70-130	-		30
Perfluorononanoic Acid (PFNA)	ND	36.1	45.1	125		-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	33.5	34.2	96		-	-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	33.7	37.1	110		-	-		70-130	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	34.6	38.4	111		-	-		70-130	-		30
Perfluorodecanoic Acid (PFDA)	ND	36.1	46.3	128		-	-		70-130	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: 122072376 **Lab Number:** L2240737

Project Number: Not Specified **Report Date:** 08/12/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1671966-3 QC Sample: L2241487-01 Client ID: MS Sample												
Perfluoroundecanoic Acid (PFUnA)	ND	36.1	43.9	122		-	-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	34.1	33.5	98		-	-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	ND	36.1	42.9	119		-	-		70-130	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	105				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	140				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	106				50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	93				50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	100				50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	99				50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	98				50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	96				50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	94				50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	99				50-200
Perfluoro[13C4]Butanoic Acid (MPFBA)	94				50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	77				50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93				50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89				50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	95				50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	94				50-200

Lab Duplicate Analysis
Batch Quality Control

Project Name: 122072376
Project Number: Not Specified
Lab Number: L2240737
Report Date: 08/12/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1671966-4 QC Sample: L2241487-02 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	2.55	2.59	ng/l	2		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	ND	ng/l	NC		30
Perfluoropentanoic Acid (PFPeA)	3.54	3.63	ng/l	3		30
Perfluorobutanesulfonic Acid (PFBS)	2.48	2.37	ng/l	5		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	ND	ng/l	NC		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	ND	ng/l	NC		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	3.75	4.10	ng/l	9		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/l	NC		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	2.09	2.41	ng/l	14		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/l	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	7.58	7.08	ng/l	7		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ng/l	NC		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: 122072376
Project Number: Not Specified
Lab Number: L2240737
Report Date: 08/12/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1671966-4 QC Sample: L2241487-02 Client ID: DUP Sample						
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	99		94		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	81		78		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	91		87		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	138		130		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	104		100		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	105		105		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	90		88		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		97		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	106		96		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	98		97		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	98		90		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	104		107		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	106		95		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	103		103		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	94		95		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	98		104		50-200

Project Name: 122072376 **Lab Number:** L2240737

Project Number: Not Specified **Report Date:** 08/12/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2240737-01A	Plastic 250ml Ammonium Acetate preserved	A	NA		3.6	Y	Absent		A2-NH-533(28)
L2240737-01B	Plastic 250ml Ammonium Acetate preserved	A	NA		3.6	Y	Absent		A2-NH-533(28)

*Values in parentheses indicate holding time in days

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: 122072376 **Lab Number:** L2240737

Project Number: Not Specified **Report Date:** 08/12/22

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

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

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

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

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

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

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

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

Report Format: Data Usability Report

Project Name: 122072376 **Lab Number:** L2240737

Project Number: Not Specified **Report Date:** 08/12/22

Footnotes

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

Terms

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

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

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

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

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

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

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

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

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

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

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

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

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

Report Format: Data Usability Report

Project Name: 122072376 **Lab Number:** L2240737

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Data Qualifiers

ND - Not detected at the reporting limit (RL) for the sample.

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: Data Usability Report

Project Name: 122072376 **Lab Number:** L2240737
Project Number: Not Specified **Report Date:** 08/12/22

REFERENCES

136 Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 533, EPA Document 815-B-19-020, November 2019.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

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

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

Westborough Facility:

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

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

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

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

Serial_No: RP220816005

L2240737

NELSON ANALYTICAL LAB

SUBCONTRACTOR SUBMISSION FORM

NELSON ANALYTICAL LAB
490 EAST INDUSTRIAL PARK DRIVE
MANCHESTER, NH 03109
PHONE: 603-622-0200

PAGE____ OF______

SUBCONTRACTOR INFORMATION			SAMPLE TYPE	REQUESTED TESTING								
Subcontracted to:		Alpha	DW - Drinking Water	EPA 533	NH 25 Compounds							LABORATORY SAMPLE I.D. NUMBER (LAB USE)
Address			WW - Waste Water									
Contact Person			SW - Surface Water									
Phone / Fax Number			S - Soil									
Sample Date	Sample Time	Sample Description / Identification	O - Other									
7/26/22	910	122072376	DW	X								

Relinquished By (signature)	Date	Time	Received By (signature)
[signature]	7/29/22	1028	[signature] AAL
[signature] AAL	7/29/22	1415	[signature]

Remarks Please Email/Fax Results when complete to: info@nelsonanalytical.com

Samples Iced in transit or preserved per method requirements

[signature] 7.29.22 15:15 [signature] 7/29/22 1515
[signature] 7/29/22 1630 [signature] AAL 7/29/22 16:30

FRM-NH-Subcontract Submission Form Blank-01 09/11/2015

ATTACHMENT A-10
PROPOSED WELL – BRW1

490 East Industrial Park Drive
Manchester, NH 03109
www.nelsonanalytical.com
(603)622-0200
NH ELAP Accreditation #NH1005

NELSON ANALYTICAL LAB

Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

Customer: Gilford Well Co., Inc.
Client Sample ID: Mountain View Contracting, #23-109
Laboratory ID: 123032776.01
Sample Matrix : Drilled Well Water
Sample Location: 35 Bean Road, Well #21-85 (Well #1)

Date Collected: 03/31/2023 11:30 AM
Collected By : R.M.
Date Received : 03/31/2023 04:15 PM
Temperature Rec'd °C: #10.9

Parameters	Results	Acceptable Level	Units	Date Analyzed	Test Method	Test Type	Test Remarks
Fluoride	0.55	4.0	mg/L	04/03/2023 12:30	SM 4500F-C	Primary	Within Standard
Antimony	<0.001	0.004	mg/L	04/05/2023 01:37	EPA 200.8	Primary	Within Standard
Arsenic	<0.0010	0.0050	mg/L	04/05/2023 01:37	EPA 200.8	Primary	Within Standard
Barium	0.044	2.00	mg/L	04/05/2023 01:37	EPA 200.8	Primary	Within Standard
Beryllium	<0.001	0.002	mg/L	04/05/2023 01:37	EPA 200.8	Primary	Within Standard
Cadmium	<0.001	0.005	mg/L	04/05/2023 01:37	EPA 200.8	Primary	Within Standard
Chromium	0.004	0.100	mg/L	04/05/2023 01:37	EPA 200.8	Primary	Within Standard
Copper	<0.010	1.30	mg/L	04/05/2023 01:37	EPA 200.8	Primary	Within Standard
Lead	<0.001	0.015	mg/L	04/05/2023 01:37	EPA 200.8	Primary	Within Standard
Mercury	<0.0004	0.002	mg/L	04/05/2023 01:37	EPA 200.8	Primary	Within Standard
Nickel	<0.001	0.10	mg/L	04/05/2023 01:37	EPA 200.8	Primary	Within Standard
Selenium	<0.010	0.050	mg/L	04/05/2023 01:37	EPA 200.8	Primary	Within Standard
Silver	<0.010	0.100	mg/L	04/05/2023 01:37	EPA 200.8	Secondary	Within Standard
Thallium	<0.001	0.002	mg/L	04/05/2023 01:37	EPA 200.8	Primary	Within Standard
Zinc	<0.010	5.00	mg/L	04/05/2023 01:37	EPA 200.8	Secondary	Within Standard
Iron	0.131	0.300	mg/L	04/05/2023 01:37	EPA 200.8	Secondary	Within Standard
Manganese	<0.010	0.050	mg/L	04/05/2023 01:37	EPA 200.8	Secondary	Within Standard
Chloride	22	250	mg/L	04/03/2023 10:30	SM 4500Cl-B	Secondary	Within Standard
pH	7.26	6.5-8.5	SU	04/03/2023 11:35	SM 4500H B	Secondary	Within Standard
Alkalinity	62	N/A	mg/L	04/03/2023 09:50	SM 2320B	N/A	No EPA Limit
Conductivity	260	N/A	umhos/cm	04/03/2023 11:00	SM 2510B	N/A	No EPA Limit
Sulfate	10.9	250	mg/L	04/06/2023 12:00	E300.0-2.1	Secondary	Within Standard
Sodium	12.2	N/A	mg/L	04/08/2023 12:00	EPA 200.7	Secondary	
Total Hardness	85	N/A	mg/L	04/05/2023 01:37	SM 2340B	N/A	No EPA Limit

ARSENIC NOTE: The New Hampshire Department of Environmental Services has established a state Maximum Contaminant Level (MCL) for arsenic of 0.005 mg/L, which took effect on July 1, 2021 for all NH public water systems. The federal EPA Safe Drinking Water Act MCL for arsenic is 0.010 mg/L. More information can be found at https://www.des.nh.gov/

Test Types: EPA Primary: Regulated by the EPA as a health related parameter
EPA Seconday: Aesthetic parameter - not regarded as a health concern

Respectfully Submitted

Andrew Nelson, Laboratory Director

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
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https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 04/12/2023

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NELSON ANALYTICAL LAB

Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

Customer: Gilford Well Co., Inc.
Client Sample ID: Mountain View Contracting, #23-109
Laboratory ID: 123032775.01
Sample Matrix : Drilled Well Water
Sample Location: 35 Bean Road, Well #21-85 (Well #1)

Date Collected: 03/31/2023 11:30 AM
Collected By : R.M.
Date Received : 03/31/2023 04:15 PM
Temperature Rec'd °C: #10.9

Parameters	Results	Acceptable Level	Units	Date Analyzed	Test Method	Test Type	Test Remarks
Bromodichloromethane	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Bromoform	<0.8	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Chloroform	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Dibromochloromethane	<0.8	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Total Trihalomethanes	<2.6	80	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
Acetone	<10	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Benzene	<0.5	5.0	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
Bromobenzene	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Bromochloromethane	<1.0	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Bromomethane	<2.0	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
n-Butylbenzene	<0.8	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
sec-Butylbenzene	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Tert-Butylbenzene	<0.8	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Carbon disulfide	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Carbon tetrachloride	<0.5	5.0	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
Chloroethane	<1.0	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Chloromethane	<0.8	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
2-Chlorotoluene	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
4-Chlorotoluene	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Dibromomethane	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
1,2-Dichlorobenzene	<0.5	600	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
1,2-Dibromoethane (EDB)	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
1,3-Dichlorobenzene	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
1,4-Dichlorobenzene	<0.5	5.0	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
Dichlorodifluoromethane	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
1,1-Dichloroethane	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
1,2-Dichloroethane	<0.5	5.0	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
1,1-Dichloroethylene	<0.5	7.0	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
cis-1,2-Dichloroethylene	<0.5	70	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
trans-1,2-Dichloroethylene	<0.5	5.0	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
1,2-Dichloropropane	<0.5	5.0	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
1,3-Dichloropropane	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
1,1-Dichloropropene	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
cis-1,3-Dichloropropene	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
trans-1,3-Dichloropropene	<0.5	5.0	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
Diethyl Ether	<1.0	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Diisopropyl ether	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Ethyl tert-Butyl Ether	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
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https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 04/04/2023

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NELSON ANALYTICAL LAB

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Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report of Analysis

Customer: Gilford Well Co., Inc.
Client Sample ID: Mountain View Contracting, #23-109
Laboratory ID: 123032775.01
Sample Matrix : Drilled Well Water
Sample Location: 35 Bean Road, Well #21-85 (Well #1)

Date Collected: 03/31/2023 11:30 AM
Collected By : R.M.
Date Received : 03/31/2023 04:15 PM
Temperature Rec'd °C: #10.9

Parameters	Results	Acceptable Level	Units	Date Analyzed	Test Method	Test Type	Test Remarks
Hexachlorobutadiene	<0.8	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Isopropylbenzene	<0.8	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
4-Isopropyltoluene	<0.8	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Chlorobenzene	<0.5	100	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
Ethylbenzene	<0.5	700	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
MEK	<5.0	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Methylene chloride	<2.4	5.0	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
MIBK	<5.0	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
MTBE	<0.5	13.0	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
Naphthalene	<0.8	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
n-Propylbenzene	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
2-Hexanone	<5.0	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Styrene	<0.8	100	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
1,1,1,2-Tetrachloroethane	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
1,1,2,2-Tetrachloroethane	<0.8	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
tert-Amyl Methyl Ether	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
tert-Butyl Alcohol	<10	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Tetrachloroethylene	<0.5	5.0	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
Tetrahydrofuran	<10	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Toluene	<0.5	1000	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
1,2,3-trichlorobenzene	<0.8	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
1,2,4-Trichlorobenzene	<0.8	70.0	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
1,1,1-Trichloroethane	<0.5	200	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
1,1,2-Trichloroethane	<0.5	5.0	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
Trichloroethylene	<0.5	5.0	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
Trichlorofluoromethane	<0.5	5.0	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
1,2,3-Trichloropropane	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
1,2,4-Trimethylbenzene	<5.0	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
1,3,5-Trimethylbenzene	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
Vinyl Chloride	<0.9	2.0	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
xylenes (total)	<1.5	10,000	ug/L	04/03/2023 19:02	EPA 524.2	Primary	Within Standard
1,3,5-Trichlorobenzene	<0.5	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit
1,1,2-Trichloro-1,2,2-trifluoroeth	<1.0	NA	ug/L	04/03/2023 19:02	EPA 524.2	N/A	No EPA Limit

'

Test Types: EPA Primary: Regulated by the EPA as a health related parameter
EPA Seconday: Aesthetic parameter - not regarded as a health concern

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
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https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
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Report of Analysis

Respectfully Submitted

Andrew Nelson, Laboratory Director

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Maine State Certification #NH01005
Vermont State Cerfication # VT1005
Maine Radon Certification # ME17500
Massachusetts State Certification #M-NH1005

Report Of Analysis

Customer :	**Gilford Well Co., Inc.**	**Date Collected:**	**03/31/2023 11:30 AM**
Client Sample ID:	**Mountain View Contracting, #23-109**	**Collected By :**	**R. M.**
Laboratory ID:	**123032774.01**	**Date Received :**	**03/31/2023 04:15 PM**
Sample Matrix :	**Drilled Well Water**	**Temperature Rec'd°C:**	**#10.9**
Sample Location:	**35 Bean Road, Well #21-85 (Well #1)**		

Parameter	Result	Units	Method	Rpt Limit	Q	Date/Time Analyzed	Analyst
Per-and Polyfluoroalkyl Substances-PFAS	See Attached		LC/MS/MS		P5	04/12/2023 12:57	SUB3

P5 ng/L is equivalent to Parts per Trillion (ppt). Analysis was performed by Alpha Analytical NH ELAP 2062. More information regarding PFC's is available on New Hampshire DES's website: https://www4.des.nh.us/nh-pfas-investigation/ The following limits apply to public water systems in the State of New Hampshire: PFHxS 18 ng/L, PFOA 12 ng/L, PFNA 11 ng/L, PFOS 15 ng/L

Respectfully Submitted

Andrew Nelson, Laboratory Director

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program, and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.
Solid samples are reported on a dry weight basis unless noted otherwise.
Subcontract Laboratories: SUB2: Nelson Analytical Maine NH2018 SUB 7: Nelson Analytical EAI Div. NH1007, SUB3: 2062 SUB4:2073/2239, SUB5:NH2530, SUB8:NH2136,
https://www4.des.state.nh.us/OneStopPub/WSEB/acclab/1005.pdf
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
https://www.mass.gov/certified-laboratories

Date Reported: 04/17/2023 11:23

ANALYTICAL REPORT

Lab Number:	L2317330
Client:	Nelson Analytical Lab 490 East Industrial Park Dr Manchester, NH 03103
ATTN:	
Phone:	(603) 622-0200
Project Name:	123032774
Project Number:	Not Specified
Report Date:	04/14/23

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

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: 123032774
Project Number: Not Specified

Lab Number: L2317330
Report Date: 04/14/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2317330-01	123032774	DW	Not Specified	03/31/23 11:30	04/03/23

Project Name: 123032774 **Lab Number:** L2317330
Project Number: Not Specified **Report Date:** 04/14/23

Case Narrative

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

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

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

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

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

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

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

Authorized Signature: Ashley Boucher Ashley Boucher

Title: Technical Director/Representative Date: 04/14/23

ORGANICS

SEMIVOLATILES

Project Name: 123032774 **Lab Number:** L2317330

Project Number: Not Specified **Report Date:** 04/14/23

SAMPLE RESULTS

Lab ID: L2317330-01
Client ID: 123032774
Sample Location: Not Specified

Date Collected: 03/31/23 11:30
Date Received: 04/03/23
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 136,533
Analytical Date: 04/12/23 12:57
Analyst: LMV

Extraction Method: EPA 533
Extraction Date: 04/11/23 19:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.00	--	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.00	--	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1

Project Name: 123032774 **Lab Number:** L2317330

Project Number: Not Specified **Report Date:** 04/14/23

SAMPLE RESULTS

Lab ID: L2317330-01 Date Collected: 03/31/23 11:30
Client ID: 123032774 Date Received: 04/03/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	111		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	109		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	94		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	124		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	112		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	86		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	94		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	100		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	114		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	103		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	95		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	107		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	121		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	100		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	95		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	95		50-200

Project Name: 123032774 **Lab Number:** L2317330

Project Number: Not Specified **Report Date:** 04/14/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 136,533
Analytical Date: 04/12/23 10:27
Analyst: LMV

Extraction Method: EPA 533
Extraction Date: 04/11/23 19:08

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab for sample(s): 01 Batch: WG1765410-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.00	--
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.00	--
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.00	--
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	2.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--

Project Name: 123032774 **Lab Number:** L2317330

Project Number: Not Specified **Report Date:** 04/14/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 136,533
Analytical Date: 04/12/23 10:27
Analyst: LMV

Extraction Method: EPA 533
Extraction Date: 04/11/23 19:08

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab for sample(s): 01 Batch: WG1765410-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	100		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	106		50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	99		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	108		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	93		50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	86		50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	100		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	92		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	114		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	97		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	102		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	99		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	113		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	96		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	93		50-200

Lab Control Sample Analysis

Batch Quality Control

Project Name: 123032774 **Lab Number:** L2317330

Project Number: Not Specified **Report Date:** 04/14/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 Batch: WG1765410-2								
Perfluorobutanoic Acid (PFBA)	92		-		50-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	100		-		50-150	-		30
Perfluoropentanoic Acid (PFPeA)	112		-		50-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	76		-		50-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	92		-		50-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	96		-		50-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	84		-		50-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	126		-		50-150	-		30
Perfluorohexanoic Acid (PFHxA)	92		-		50-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	66		-		50-150	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	68		-		50-150	-		30
Perfluoroheptanoic Acid (PFHpA)	86		-		50-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	101		-		50-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	133		-		50-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	107		-		50-150	-		30
Perfluorooctanoic Acid (PFOA)	110		-		50-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	73		-		50-150	-		30
Perfluorononanoic Acid (PFNA)	102		-		50-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	101		-		50-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	103		-		50-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	98		-		50-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 123032774 **Lab Number:** L2317330

Project Number: Not Specified **Report Date:** 04/14/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 Batch: WG1765410-2								
Perfluorodecanoic Acid (PFDA)	90		-		50-150	-		30
Perfluoroundecanoic Acid (PFUnA)	106		-		50-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	95		-		50-150	-		30
Perfluorododecanoic Acid (PFDoA)	100		-		50-150	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	102				50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	98				50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	116				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	110				50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	91				50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	99				50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	113				50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	85				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	112				50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89				50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	114				50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	103				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	127				50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	98				50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	93				50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	86				50-200

Matrix Spike Analysis

Batch Quality Control

Project Name: 123032774 **Lab Number:** L2317330

Project Number: Not Specified **Report Date:** 04/14/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1765410-3 QC Sample: L2316902-01 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	ND	1.92	ND	90		-	-		50-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	1.92	ND	88		-	-		50-150	-		30
Perfluoropentanoic Acid (PFPeA)	ND	1.92	1.95	102		-	-		50-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	1.7	ND	103		-	-		50-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	1.92	ND	86		-	-		50-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	1.71	ND	98		-	-		50-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	1.92	ND	**48**	Q	-	-		50-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	1.8	ND	85		-	-		50-150	-		30
Perfluorohexanoic Acid (PFHxA)	ND	1.92	ND	92		-	-		50-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	1.8	ND	98		-	-		50-150	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	1.92	2.57	134		-	-		50-150	-		30
Perfluoroheptanoic Acid (PFHpA)	ND	1.92	2.03	106		-	-		50-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	1.75	ND	90		-	-		50-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	1.81	ND	76		-	-		50-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	1.82	ND	90		-	-		50-150	-		30
Perfluorooctanoic Acid (PFOA)	ND	1.92	2.60	136		-	-		50-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	1.83	ND	92		-	-		50-150	-		30
Perfluorononanoic Acid (PFNA)	ND	1.92	ND	92		-	-		50-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	1.78	ND	80		-	-		50-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	1.79	ND	79		-	-		50-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	1.84	ND	100		-	-		50-150	-		30
Perfluorodecanoic Acid (PFDA)	ND	1.92	ND	90		-	-		50-150	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: 123032774 **Lab Number:** L2317330

Project Number: Not Specified **Report Date:** 04/14/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1765410-3 QC Sample: L2316902-01 Client ID: MS Sample												
Perfluoroundecanoic Acid (PFUnA)	ND	1.92	2.14	112		-	-		50-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	1.81	ND	93		-	-		50-150	-		30
Perfluorododecanoic Acid (PFDoA)	ND	1.92	ND	94		-	-		50-150	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	116				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	98				50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	122				50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**20**	Q			50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	63				50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	59				50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**27**	Q			50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**30**	Q			50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	101				50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	65				50-200
Perfluoro[13C4]Butanoic Acid (MPFBA)	**34**	Q			50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**31**	Q			50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	103				50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	**34**	Q			50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**48**	Q			50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	92				50-200

Lab Duplicate Analysis
Batch Quality Control

Project Name: 123032774
Project Number: Not Specified
Lab Number: L2317330
Report Date: 04/14/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1765410-4 QC Sample: L2316902-02 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	ND	ND	ng/l	NC		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	ND	ng/l	NC		30
Perfluoropentanoic Acid (PFPeA)	ND	ND	ng/l	NC		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/l	NC		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	ND	ng/l	NC		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	ND	ng/l	NC		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	ND	ND	ng/l	NC		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/l	NC		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/l	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	ND	ND	ng/l	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ng/l	NC		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: 123032774
Project Number: Not Specified
Lab Number: L2317330
Report Date: 04/14/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1765410-4 QC Sample: L2316902-02 Client ID: DUP Sample						
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	57		**34**	Q	50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	52		**34**	Q	50-200
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	106		102		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	122		112		50-200
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**43**	Q	**32**	Q	50-200
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**43**	Q	**30**	Q	50-200
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	107		101		50-200
Perfluoro[13C8]Octanoic Acid (M8PFOA)	**47**	Q	**41**	Q	50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	133		116		50-200
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	60		57		50-200
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	111		104		50-200
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	75		69		50-200
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	136		122		50-200
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	80		75		50-200
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	81		82		50-200
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**39**	Q	**22**	Q	50-200

Project Name: 123032774 **Lab Number:** L2317330

Project Number: Not Specified **Report Date:** 04/14/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2317330-01A	Plastic 250ml Ammonium Acetate preserved	A	NA		3.0	Y	Absent		A2-NH-533(28)
L2317330-01B	Plastic 250ml Ammonium Acetate preserved	A	NA		3.0	Y	Absent		A2-NH-533(28)

*Values in parentheses indicate holding time in days

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA/PFTeDA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS/PFDoS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
Perfluoropropanesulfonic Acid	PFPrS	423-41-6
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA/PFOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: 123032774
Project Number:

Lab Number: L2317330
Report Date: 04/14/23

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
FLUOROTELOMER CARBOXYLIC ACIDS (FTCAs)		
3-Perfluoroheptyl Propanoic Acid	7:3FTCA	812-70-4
2H,2H,3H,3H-Perfluorooctanoic Acid	5:3FTCA	914637-49-3
3-Perfluoropropyl Propanoic Acid	3:3FTCA	356-02-5

Project Name: 123032774 **Lab Number:** L2317330

Project Number: Not Specified **Report Date:** 04/14/23

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

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

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

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

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

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

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

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

Report Format: Data Usability Report

Project Name: 123032774 **Lab Number:** L2317330

Project Number: Not Specified **Report Date:** 04/14/23

Footnotes

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

Terms

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

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

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

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

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

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

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

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

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

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

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

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

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

Report Format: Data Usability Report

Project Name: 123032774 **Lab Number:** L2317330

Project Number: Not Specified **Report Date:** 04/14/23

Data Qualifiers

ND - Not detected at the reporting limit (RL) for the sample.

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: Data Usability Report

Project Name: 123032774 **Lab Number:** L2317330

Project Number: Not Specified **Report Date:** 04/14/23

REFERENCES

136 Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 533, EPA Document 815-B-19-020, November 2019.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

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

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

Westborough Facility:

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

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

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

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

L2317330

NELSON ANALYTICAL LAB

SUBCONTRACTOR SUBMISSION FORM

NELSON ANALYTICAL LAB
490 EAST INDUSTRIAL PARK DRIVE
MANCHESTER, NH 03109
PHONE: 603-622-0200

PAGE ____ OF ____

SUBCONTRACTOR INFORMATION			SAMPLE TYPE	REQUESTED TESTING							
Subcontracted to:		Alpha	DW - Drinking Water WW - Waste Water SW - Surface Water S - Soil O - Other	EPA 533	NH 25 compounds						LABORATORY SAMPLE I.D. NUMBER (LAB USE)
Address											
Contact Person											
Phone / Fax Number											
Sample Date	Sample Time	Sample Description / Identification									
3/31/23	1130	1230327T4	DW								17330-01

Relinquished By (signature)	Date	Time	Received By (signature)
	4/3/23	14:20	AAL
	4/3/23	1820	

Remarks: Please Email/Fax Results when complete to: info@nelsonanalytical.com

Samples Iced in transit or preserved per method requirements

4/03/23-1930- AAL 4/3/23 19:30

AAL 4/3/23 20:39

4/3/23 20:39

FRM-NH-Subcontract Submission Form Blank-01 09/11/2015

ATTACHMENT B
REVISED PRELIMINARY REPORT FORM AND WAIVER REQUEST

Small Production Wells for Small Community Water Systems Preliminary Report

Drinking Water and Groundwater Bureau

RSA/Rule: RSA 485:8, RSA 485:48, Env-Dw 305

PRELIMINARY REPORT COVER PAGE

PROJECT NAME	Harbor Landing
PROJECT TOWN	Moultonborough
PWS ID	TBD Concept Approval DR 006013, July 21, 2021

APPLICANT (Project/Water System Owner)

Name	Mark Koss, Koss Construction, LLC / Mountain View Contracting
Mailing Address	172 Carli Boulevard, Colchester, CT 06415
Daytime Phone Number	603-707-9340
Email Address	kossconstructionllc@gmail.com

WELL SITE OWNER (Property Owner)

Name	Mark Koss, Koss Construction, LLC / Mountain View Contracting
Mailing Address	172 Carli Boulevard, Colchester, CT 06415
Daytime Phone Number	603-707-9340
Email Address	kossconstructionllc@gmail.com

PROJECT CONTACT/REPORT PREPARER

Name	Abigail Thompson Fopiano
Company Name	Edgewater Strategies, LLC
Mailing Address	26 Chalet Drive, Gilford NH 03249
Daytime Phone Number	603-630-1971
Email Address	abby@edgewaternh.com

PUMPING TEST PERFORMER/CONTACT

Name	Edgewater Strategies, LLC	Gilford Well Company
Mailing Address	26 Chalet Drive, Gilford NH 03249	1440 Lake Shore Road, Gilford, NH 03249
Daytime Phone Number	603-630-1971	603-524-6343
Email Address	abby@edgewaternh.com	

SUBMITTAL INFORMATION

1. Project Type:
   a. _X__ New well(s) for New System
   b. ____ New well(s) for Existing System
   c. ____ Replacement well(s) for Existing System
   d. ____ Hydrofractured or Deepened well(s) for Existing System

2. Proposed source capacity volume in gallons per day: 25,200 gpd Combined, 12,600 gpd from each BRW1 and BRW2

Section 1.0 GENERAL INFORMATION

1.1 Project Information

1.1a Does the applicant (project or water system owner) own or otherwise have legal control of the well site(s) and the land within the Sanitary Protective Area(s) (SPA) of the well(s)?
YES__X_ NO___

If **YES,** attach a copy of the recorded deed, easement or other legally binding document.
If **NO**, attach a letter or equivalent document signed by the owner of the well site property that authorizes the applicant to apply for a new small production well(s) on the property.

1.1b Will the applicant retain ownership of the water system after approval for the new production well(s) is obtained?
YES___ NO_X_

If **YES**, go to **Section 1.2** below.
If **NO**, identify the future water system owner:

Name __Harbor Landing Homeowner's Association [Full details TBD]_____

Address_____

Company _____

Daytime Phone Number_____

1.1c Describe when and how ownership will be transferred to this future owner.

_____

1.2 Water Conservation

Has a Water Conservation Plan (WCP) been submitted, in accordance with Env-Wq 2101, *Water Conservation*?

YES __X___ NO _____ Date of Submittal: ___To be finalized wth Final Report Submission_____

(Please be advised that NHDES cannot issue final approval for the new well until a WCP has been approved. Please use the Water Conservation Plan Guidance Document located at http://des.nh.gov/organization/divisions/water/dwgb/water_conservation/index.htm or contact NHDES' Water Conservation program at (603) 271-0659 for WCP assistance.)

1.3 Site Location Maps and Sketch

1.3a. **Site Map** *(Show the well location on a US Geological Survey [USGS] topographic map.)*

Name and Date of USGS Map_____NH DES Mapper, USGS ESRI/GRANIT data layer 8/23/2021

1.3b. Tax Map
(Show the well location on a municipal tax map or surveyed site plan and identify the map and lot numbers.)

Town tax map and lot number Moultonborough Tax Map 170 Lot 12

1.3c. Site Sketch
Provide a sketch **with a scale of 1"=100' or larger**, showing the well location, elevation contours, stormwater drainage structures, and **everything** within at least 1,000 feet of the new well. Incorporate historic, existing and proposed land uses, including:

- livestock areas
- foot paths
- homes
- sand/soil/wood piles
- mowed areas
- recreational areas
- pump houses
- septic systems
- surface waters
- gravel roads
- driveways
- farm animals
- roads (and ROW)
- farm fields
- athletic fields
- wetlands
- easement areas
- landscaped areas
- protected lands
- parking
- buildings/sheds
- other wells
- flood plain
- fuel tanks
- fences
- trails
- dumpsters
- storage
- salt piles

(Please Note: Other sections of this form require additional information that should be included on this sketch. If this is a new well for an existing system and no surveyed site plan exists, an aerial photograph base map may be used as long as all features listed above are clearly shown and labeled.)

Section 2.0 SOURCE CAPACITY REQUIREMENTS

(This information is needed to ensure that the new well(s) will meet the intended purpose and the pumping test is designed appropriately.)

2.1 Water System

Is this a new water system? YES X NO___

If **YES**, go to **Section 2.2**
If **NO**, go to **Section 2.3**

2.2 PROPOSED (*NEW*) Water System

A request for Concept Approval under Env-Dw 405.04 will be reviewed as part of the Preliminary Report provided the following information is submitted with this form.

2.2a. Concept Approval
Will this water system be a public water utility subject to regulations under the NH Public Utilities Commission and/or charge any connections or customers for water based on metered water use?

YES___ NO X
(If **YES**, please contact NHDES' Small Systems Engineering program at (603) 271-2953 for further instructions. Provide a map locating the proposed service area.)

2.2b Type of System

___ Single Family Homes
___ Mobile Home Park
_X_ Apartment or Condominium Complex or Clustered Townhouse/Duplex, not age-restricted
___ Nursing Home or Assisted Living Facility
___ Age-restricted Elderly Housing (*Standalone units, Clusters or Townhouse/Duplexes, etc.*)
___ Other. Describe: _____

2.2c. Source Capacity Requirements *(Size of the system.)*

2.2c.1 What is the total source capacity required for the system under Env-Dw 405? *Use Worksheet A to calculate source capacity and to explain how the calculations were developed.*

25,200 gallons/day (gpd).

*Please note that Env-Dw 405 requires irrigation be included in source capacity estimates. If **landscape irrigation** is planned for this project, this use **must** be included in the source capacity calculations, even if a separate well and system will be installed for irrigation purposes.*

*(If the source capacity requirements for the new system exceed 57,600 gpd, **STOP!** This project will require a large groundwater withdrawal permit under Env-Wq 403, Large Groundwater Withdrawals. Contact NHDES' Community Well Siting program at (603) 271-8866 for further guidance.)*

2.2c.2 How will source capacity requirements be met? *(Complete Table 2-1.)*

(How many wells are planned, are they bedrock or overburden and what yield is anticipated from each well? System source capacity equals the sum of the permitted production volumes of all wells, new and existing. The permitted production volume of a new well is the maximum amount that can be withdrawn over any 24-hour period and is demonstrated by a constant rate pumping test.)

Table 2-1, PROPOSED NEW WELLS (For a New Water System)

Well Name and Number *(ex. Bedrock Well 1)*	Well Type *(Bedrock or Overburden)*	Proposed Pumping Rate (gpm)	Proposed Permitted Production Volume (gpd)
BRW1	Bedrock	8.75 gpm	12,600 gpd
BRW2	Bedrock	*8.75 gpm	12,600 gpd

*If waiver request granted, BRW2 will not be pumped.

*(If you have answered all the questions in **Section 2.2** above, Go To **Section 3.0**.)*

2.3 EXISTING Water System

2.3a Project Type *(check one)*

____Installation of a new well(s) ***(Complete Sections 2.3-7.0)***
____Reactivation of an inactive well(s) ***(Complete Sections 2.3-7.0)***
____Increasing the approved maximum daily withdrawal or permitted production volume of an existing active well(s) ***(Complete Sections 2.3-7.0)***
____Deepening or hydrofracturing an existing active well(s) to regain lost capacity ***(Complete Sections 2.3b-f, 3.1-3.3 & 4.0-6.0)***
____Replacement of an existing active well ***(Complete Sections 2.3b-f, 3.0-6.0)***

2.3b Type of Need *(Why does the system need a new well? Check all that apply.)*

____To obtain approval for an increase in users. *(a system expansion; please note that engineering review and approval for the expansion is required)*
____To meet current demand or design requirements. *(a system deficiency)*
____To meet unusual demands. *(more than the standard flows)*
____To supplement declining yields of existing wells
____To replace an existing well. Explain why a replacement well is needed.
____ Other. Describe: _____

2.3c Water Shortages

2.3c.1 Has the water system experienced any water shortages?
YES___ NO___
If **NO**, go to (2.3d.) below.
If **YES**, describe the events and measures taken, including dates if available and provide a general assessment of where and how customers are using water. Attach water meter records for the well(s) for the past two years and provide daily meter records that show peak use, if available.

_____

2.3c.2 Were water conservation measures implemented?
YES _____ NO _____

If **YES**, describe the measures taken.

_____

2.3c.3 Will it be necessary to connect the new well to the water system prior to final approval due to a water system emergency?

YES _____ NO _____

If **YES**, describe the emergency.

_____

_____

2.3d. Describe the existing system.
How many wells does the system have (*active & inactive*)? _____
How many wells are being used now? _____
How many of the existing wells were constructed after July 1998? _____
Specify which wells were constructed after July 1998. _____
How many service connections does the system have? _____
What type(s) of use(s) does the system serve *(refer to Env-Dw 405 to identify use type)?*
_____

2.3e.What is the total source capacity required for the existing system under Env-Dw 405? *(Please use worksheet A to ensure calculations are complete and describe how those calculations were developed. If **landscape irrigation** is planned for this project, or already exists at the water system, this use **must** be included in the source capacity calculations.)*

Total Source Capacity Required under Env-Dw 405 = _____ gpd

2.3f. Are more service connections proposed?
YES___ NO___

If **NO**, go to (2.3g.) below.

2.3f.1 If **YES**, how many new connections are proposed? _____ *(Go to 2.3f.2.)*

2.3f.2.What is the total source capacity required for the system under Env-Dw 405 after the expansion?

Total Source Capacity Required for the expanded system = _____ gpd

2.3g. **Number and Operation of Existing Wells**

2.3g.1 Describe the existing wells in Table 2-2 and provide well logs *(Well Completion Report, if available)* for each well. Document the **maximum sustainable capacity** of each well. (*This is the maximum rate, in gpm, at which the well can operate on a continuous, long-term basis, without running out of water. Include wells that will be replaced, reactivated or improved to regain lost capacity by deepening, increasing the pumping rate or by hydrofracturing.)* Attach extra sheets as needed.

Table 2-2, EXISTING WELLS *(Show all well locations on the site sketch in **Section 1.3c**.)*

Well Name or PWS Source ID Number/ Date Installed or Well Completion Report # *(Include wells not currently in use that will be reactivated or improved)*	Current Use		Proposed *(Improved)*Use	
	Pumping Rate (gpm)	Maximum Total Daily Withdrawal or Permitted Production Volume (gpd)	Pumping Rate (gpm)	Maximum Total Daily Withdrawal or Permitted Production Volume (gpd)

2.3g.2 Describe in Table 2-3 how the maximum sustainable capacity was determined for each well. *(For example, water meter records, sanitary survey reports, driller's log, pumping test report, etc.)*

Table 2-3, CAPACITY

Well Name/ PWS Source ID	Description of How Maximum Sustainable Capacity was Determined

2.3h Number and Operation of <u>Proposed</u> *(New)* Wells

Describe proposed new wells in Table 2-4. *(Show all proposed new well locations on the site sketch in **Section 1.3c**.)*

Table 2-4, PROPOSED NEW WELLS (New Wells for an Existing Water System)

Well Name and Location	Well Type, Bedrock or Overburden	Proposed Use	
		Maximum Pumping Rate (gpm)	Proposed Permitted Production Volume (PPV) (gpd)

2.3i. Meeting Source Capacity Requirements
(If the PPVs of all of the system's existing wells constructed after July 1998 ***PLUS*** *the PPVs of the proposed new wells are greater than 57,600 gpd,* ***STOP!*** *This project will require a large groundwater withdrawal permit under Env-Wq 403, Large Groundwater Withdrawals. Contact NHDES' Community Well Siting program at (603) 271-8866 for further guidance.)*

Section 3.0 SOURCE WATER PROTECTION

(This information is needed to evaluate the appropriateness of the well site based on land uses.)

3.1 Land Uses in Immediate Area

3.1a. **Historic Land Uses** Describe historic use(s) *(a 50-year history)* of the well site property within at least 500 feet of the new well. List sources of information.

Based on Town Assessors database and aerial photographs, the area within 500 feet to the north and east have remained undeveloped. The area within 200 feet to the south and west is undeveloped. The land use within 200 and 500 feet to the south and west have been utilized as residential properties and commercial (non-industrial) property.

3.1b. Existing Land Uses Describe the existing land use(s) on the property within at least 500 feet of each new well. *(Include any activity listed in* ***Section 1.3c****.)*

The area within 500 feet to the north and east are undeveloped. The area within 200 feet to the south and west is undeveloped. The land use within 200 and 500 feet to the south and west is utilized as residential and commercial (non-industrial) property.

3.1c. **Proposed Land Uses** Describe proposed use(s) of the property within at least 500 feet of each new well. *(Include any activity listed in* ***Section 1.3c****.)*

175-foot SPA to be in natural state - with exception of access road to wells and pump house.
Other land within 500 feet to remain as is or incorporate new homes/roadway for development. See site plans.

3.1d. **Site Sketch** Do all of the land uses described above appear on the site sketch required by **Section 1.3c**?

YES X NO____

If **YES**, go to **Section 3.2**.
If **NO**, return to the site sketch and add this information before going on to **Section 3.2**.

3.2 Proximity to Surface Water and Floodplain

3.2a. **Setback from floodplain** *(This information must be obtained using the Federal Emergency Management Agency's (FEMA) Flood Hazard Maps, which can be obtained from the town in which the project is located or FEMA's website at http://www.fema.gov/national-flood-insurance-program-flood-hazard-mapping.)*

3.2a.1. Will the proposed new well be located in the 100-year flood plain? YES___ NO X

If **YES**, What is the flood elevation?

What is the elevation of the well site? approximately 522 feet amsl

What will be the final wellhead elevation?___approximately 2 feet above grade.___

How were these elevations determined? _2-foor contours/elevations datalayer on Town GIS database_

If **NO**, *(If the well site is not in a 100-year floodplain)* then how far is the well site from the nearest floodplain? _>1000_____Feet

3.2a.2 Attach copies of the relevant portions of the Flood Hazard Map (formerly the Flood Insurance Rate Map) or any engineering calculations or surveyed information used to identify floodplain locations and elevations in relation to the proposed new well, if a Flood Hazard Map is not available.

3.2b. Setback from surface water

How far from the well site is the nearest surface water or persistent wetland?__>50 ft____ *(Surface water includes streams, brooks, ponds, drainage ditches, detention ponds, fire ponds or lakes. A persistent wetland is one that is flooded with water above the ground surface for at least 30 consecutive days. New wells must be located at least 50 feet from surface water or persistent wetlands.)*

Describe all surface waters and wetlands within 1,000 feet of the proposed new well(s). Include distances. *(Be prepared to sample for Microscopic Particulate Analysis (MPA) if a proposed overburden well is within 100 feet of a surface water or wetland or if a proposed bedrock well is within 200 feet of a surface water or wetland. The location and extent of all surface waters and wetlands should be shown accurately on the map required in Section 1.3. In some instances wetland delineation by a New Hampshire-certified wetland scientist may be required.)*

_____Wetlands are within 200 feet of the well. MPA testing will be performed._____

3.3 Sanitary Protective Area

3.3a. Sanitary Protective Area (SPA) Radius

What is the radius of the SPA around each proposed new well? *(Complete Table 3-1 for each proposed new well. The size of the SPA depends on the proposed permitted production volume(s) [PPV] of the well(s). Match the proposed PPV for each well to the SPA radius in the table below. **If more than one well is within an SPA, then the SPA radius for each well will be based on the combined PPV for those wells. Please note, each well must have a separate SPA**. The SPA for each well is a circle, centered on the well, with an appropriately identified radius.)*

SANITARY PROTECTIVE AREA RADII

Permitted Production Volume (gpd)	Radius (feet)
less than 14,400	150
14,401 to 28,800	175
28,801 to 57,599	200

Table 3-1, SANITARY PROTECTIVE AREA RADII

Well Name/Number	Proposed Permitted Production Volume (gpd)	Radius (ft)
BRW1	12,600 gpd	175 feet
BRW2	12,600 gpd	175 feet

3.3b. Provide a site sketch of the SPA(s) showing the well location, the SPA radius for each well, and property lines. *(You may use the map provided in **Section 1.3c**.)*

3.3c. **Sanitary Protective Area Land Use Evaluation**
Is all the land inside the SPA in a natural, undisturbed state and will it remain that way after build out of the project?
YES_X_ NO___

If **NO**, show **all** land uses, alterations, and activities *(See **Section 1.3c** for a listing of these types of activities.)* on the site sketch in **Section 3.3b** and provide a schedule for removal of all non-conforming uses. *(If any land uses not required for operation and maintenance of the well cannot be removed, the system must obtain a waiver, see Worksheet B for a waiver application.)*

3.3d. **Legal Control of Sanitary Protective Area**
Does the water system own all of the land in the SPA?
YES_X_ NO___

If **YES**, identify the recorded deed book and page number(s), county name and date(s) of record and provide tax maps.

Deed Book and Page Number Deed Book 3536 Page 0028

County Carroll Date Recorded 10/06/2020

If **NO**, does the water system intend to gain control by purchasing the land or obtaining a land use easement?
YES___ NO___

If **NO**, the water system must obtain a waiver for those portions of the SPA that they will not own or control through easements. *(See Worksheet B for a waiver application.)*
If **YES**, attach a copy of the proposed easement language and describe when the easement will be recorded, if pertinent. *(Recorded easements must accompany the final report.)*

3.4 Preliminary Wellhead Protection Area (WHPA)

3.4a. Draw the Preliminary Wellhead Protection Area on the USGS map in **Section 1.3a** or submit a copy of the GIS Map provided by NHDES depicting the WHPA.

3.4b. **Collection of Information**

3.4b.1 Have you obtained a GIS Map and Inventory of water users, potential contaminant sources (PCS) and known contaminant sources within the WHPA from NHDES that is less than 90 days old? *(Submit a copy of the GIS Map and Inventory with this form.)*
YES _X_ NO___

If **NO**, **do not complete any more of this form until you have obtained an updated inventory and map**.

3.4b.2 Have you completed a windshield survey for PCSs within the WHPA, including a review of municipal records?
YES_X_ NO___

If **NO**, see the *Applicant's Toolkit* for guidance on completing a windshield survey. **Do not complete any more of this form until you have completed a windshield survey**.

If **YES**, complete and attach a copy of the windshield survey worksheet found in the *Applicant's Toolkit* or at the end of this form *(Worksheet C).*

3.4c. **Inventory Review**

Using the information collected above *(in 3.4b)* answer the following:

3.4c.1 Are public or private wells located within 1,000-feet of the proposed new wells? *(All developed lots not served by a public water system should have a private well.)*
YES_X_ NO___

If **YES**, how many?~40 *(Show private well locations on the tax map provided in **Section 1.3b**.)*

3.4c.2 Provide a list of all public and private well owners within 1,000 feet of the proposed new well(s). *(List names, addresses and lot numbers.)*

Please see attached list of developed parcels with suspected wells.

If there are any active known contamination sources within the WHPA for the well, NHDES files for these projects must be reviewed to determine if contamination from the site poses a risk to the proposed new well. *(Projects listed as "inactive" or "closed" or are listed as UICs do not require a file review.)*

If no active known contamination sources exist within the WHPA, go to **Section 4.0**, Pumping Test Proposal.

3.4c.3 Have NHDES files for active known contamination sources been reviewed?
YES_X_ NO___

If **NO**, see the *Applicant's Toolkit* for guidance on conducting a file review. **Do not complete any more of this form until you have completed any necessary file review.**

If **YES**, attach the pertinent file review information. See updated Map and Inventory List for notes on PCSs

File Review completed by
_Abigail Fopiano_____

Date completed _August 2021 via NH DES One Stop Database_____

3.4c.4 Based on the file review findings, is there an active known contamination site that might affect the quality of water derived from the proposed new well(s)?
YES___ NO_X_

If **YES**, propose work to evaluate the potential impact on the proposed new well(s*). (For example, pumping the well longer and taking more water quality samples and/or monitoring or sampling other wells during the pumping test.)*

NHDES #202105043 and NH DES#202104006 – Nearby PWS and Private Well PFAS detection, no known source. PFAS has been detected in bedrock wells up gradient, adjacent and downgradient of the proposed wells. SEE PROPOSED Contamination Control Progam

_____

If **NO,** *(If there is an active known site but you don't believe it will affect the proposed new well(s)),* then explain why the contamination does not pose a threat. Support the explanation with documentation. *(Such as groundwater flow maps indicating that the plume is migrating away from the well site.)*

NHDES #199009029. The former MTBE release at the Irving Oil is not anticipated to impact the new wells. Per a July 2021 monitoring report, any recent detections of contaminants above AGQS in bedrock wells have been downgradient of the release, which is in the opposite direction from the proposed wells. As required, VOCs will be collected from each well at the end of the pumping period.

NHDES #199302032. The former Thriftamat Laundromat VOC contamination is not anticipated to impact the new wells. Per a June 2020 monitoring report, any recent detections of contaminants above AGQS in overburden wells have been downgradient of the release, which is in the opposite direction from the proposed wells. On-Site bedrock water quality data was not available to review. As required, VOCs will be collected from each well at the end of the pumping period.

_____

Section 4.0 PUMPING TEST PROPOSAL

NHDES experience shows that there are often discrepancies between the pumping test proposal and what happens during the test. This sometimes results in a need to repeat the test. To **avoid repeating the pumping test**, NHDES asks that a **complete description** of the proposed pumping test be provided. *(See Env-Dw 305.14 and the Field Guide for Pumping Test Operators for a discussion of pumping test design and requirements.)*

4.1 Test Setup

Who is the company responsible for installing the pump and discharge setup for the pumping test and/or reading and recording measurements during the test. *(List all responsible parties and describe the tasks they will perform. Please note that if the pump will be permanently installed, the company performing this task must have a New Hampshire pump installer license.)*

Company Gilford Well Company Pumping Test execution will be overseen by Edgewater Strategies

License Number 192

4.2 Operation of Wells

4.2a. Existing Well(s)

4.2a.1 How will the system's existing wells be operated during the test? *(Complete Table 4-1.)*

4.2a.2 If existing wells will be pumped at a constant rate, how will pumping rates be both measured and maintained*? (Complete Table 4-2 for each well. Standard equipment is a calibrated in-line cumulative flow meter that reads in gallons and is properly sized for the expected flow rate. Pumping rates must be measured as often as water level measurements are taken, after the first 10 minutes of pumping. All cumulative flow meter readings must be recorded after the first hour of the test. The pumping rate should not vary by more than +/-5%.)*

There are no previously existing wells on the property.

4.2b. Proposed New Well(s)

How will constant pumping rates be maintained for the proposed new well(s) during the pumping test? Describe how the rates will be managed to offset hydraulic head changes (i.e., drawdown). *(Complete Tables 4-1 and 4-2.) (Pumping rates shall be constant and not vary by more than +/-5% after the first 24 hours of pumping. All proposed new wells required to meet the source capacity requirements of the system must be pumped together during the testing.)*

Wells will be pumped to open discharge. A ball valve will be installed within the wellhead set-up to allow for manual adjustment of flow.

Table 4-1, PROPOSED OPERATION OF WELLS (Existing & Proposed)

Well Name/Number	Pumping Rate (gpm)	Operation Schedule *(Constant Rate, As Needed, or Off)*
BRW1	8.75 gpm	Constant Rate
BRW2	*8.75 gpm	Constant Rate
	* =If waiver request granted, BRW2 will not be pumped.	

Table 4-2, PUMPING RATE MEASUREMENTS (Existing & Proposed New Wells)

Well Name/ Number	Equipment	Method	Schedule *(Frequency of Measurement)*
BRW1	In-line flow meter	Hand reading Instantaneous flow and totalizer	Every hour
*BRW2	In-line flow meter	Hand reading Instantaneous flow and totalizer	Every hour
* =If waiver request granted, BRW2 will not be pumped.			

4.2c. Where will the pumped water be discharged? *(Complete Table 4-3 for each proposed new well and show the location(s) on the site sketch in **Section 1.3c**. The discharge from all wells must be directed to locations that ensure the water will flow unrestricted away from all wells and explain why you believe the discharge will not affect aquifer hydraulics. A temporary discharge permit is required for all pumping tests.)*

TABLE 4-3, PROPOSED DISCHARGE LOCATIONS

Well Name/Number	Discharge Location/Explanation	Distance from and Name/Number of Nearest Well
BRW1	At least 300 feet west of the wells on the property.	>300 feet
*BRW2	At least 300 feet west of the wells on the property.	>300 feet

4.3 Water Level Measurements

4.3a. How and when will water levels be measured in each well during the pumping and recovery periods? *(Complete Table 4-4 for each well.) (The standard equipment is a data-logger, pressure transducer or electronic water level indicator. For the pumped well; water level measurements must be taken just before pumping begins, every 5 minutes for the first hour of pumping and at least once per hour thereafter. For water level recovery monitoring; at least 10 measurements shall be collected over a period equivalent to the pumping period of the pumping test or until the water level in the new well has recovered to 90% of the pre-pumping water level. Water level measurements in existing wells shall be recorded just before pumping of the proposed new well(s) begins, at least every 2 hours during pumping and just after pumping ends. Water level measurements may be recorded more frequently, if desired.)*

Table 4-4, WATER LEVEL MEASUREMENTS (Existing & Proposed New Wells)

Well Name/Number	Measurement Schedule *(Frequency)*	Equipment
BRW1	Every 10 minutes* - before, during and after pumping period. At least every hour	Pressure transducer Hand-held WLM/Sonic reader
BRW2	Every 10 minutes* - before, during and after pumping period. At least every hour	Pressure transducer Hand-held WLM/Sonic reader
Piezometer / Staff Gauge Pair** **to be installed	Just before pumping, at least every hour during pumping period and just after pumping	Hand-held WLM/Sonic reader or a pressure transducer

*Every 5 minutes for the first hour of pumping

4.3b. **Static Water Levels**

Can existing wells be shut down before the start of the pumping test to obtain static water levels? *(The static water level is the water level in the well under natural, non-pumping conditions. To get accurate static water levels wells should be shut down for as long as possible.)*

YES_X_ NO___

If **YES**, how long will wells be shut down and how will water be provided to the system. *(During shut-down, water can be provided to the system from existing storage or tanked-in bulk water.)*

New development, no system to feed. Wells will be off for at least 72 hours after pumps are installed and prior to start of pumping period of pumping test.

If **NO**, describe why not and how static water levels will be determined.

_____

_____

4.4 Monitoring of Non-System Wells

(You must provide an assessment in the final report of how the proposed new well(s) will influence other wells within a 1,000-foot radius. You also need to gather data to identify the effect other wells have on water levels in the proposed new well(s) and to correct the data for any effect, if necessary.)

Will pumping and water levels in non-system wells be monitored?
YES X NO___

If **NO**, describe why not and how the effect of the proposed new well(s) on other wells will be determined and how you will separate the effects of the other wells on water levels in the proposed new well(s).

_____

If **YES**, describe the monitoring plan for each well in Table 4-5. *(Show the locations of non-system wells on the tax map provided for **Section 1.3b**.)* Attach an example of a letter requesting permission to monitor the non-system well(s) and an example permission form that will be returned to you by the well owner indicating whether they grant permission. *(Note: if a non-system well(s) will be monitored using a device that will come in contact with the water in the well, you will be required to sample the well for bacteria prior to installing and after removing the device.)*

Table 4-5, PROPOSED MONITORING OF NON-SYSTEM WELLS

Well Name/Number	Water Level Measurement Method	Water Level Measurement Schedule *(Time of day and frequency)*
As detailed in Private Well Monitoring Plan and Contamination Control Program	Pressure Transducer	At least every 10 minutes. 72 hours before, during and 72-hours after pumping period.

Section 5.0 SUSTAINABLE YIELD EVALUATION

NHDES experience shows that the evaluation of the well's yield under the rules and its impact on conducting the pumping test is often misunderstood. In some cases, this has meant the applicant has had to repeat the pumping test. To **avoid repeat testing**, NHDES asks the applicant to provide a complete description, **in their own words**, of how the sustainable yield of the proposed new well(s) will be determined. Stabilization during the pumping test and a 180-day extrapolated estimate of drawdown are two methods for determining sustainable yield. *(Refer to Env-Dw 305 and the* Field Guide for Pumping Test Operators*.)* How will sustainable yield be identified for each well tested? *(Describe the criteria used to determine when to end the test and how water level data will be used to identify yield of each well in Table 5-1.)*

Table 5-1, EVALUATION OF SUSTAINABLE YIELD

Well Name/Number	Description of Yield Evaluation to be Performed
BRW1	Pumping rate when stabilization of water levels (the average change in water level in the pumping well is 0.5 feet or less over a period of at least 12 hours) during the pumping period is observed. And extrapolate that water level curve to 180-days on a semi-log scale.
*BRW2	Pumping rate when stabilization of water levels (the average change in water level in the pumping well is 0.5 feet or less over a period of at least 12 hours) during the pumping period is observed. And extrapolate that water level curve to 180-days on a semi-log scale. * =If waiver request granted, BRW2 will not be pumped.

Section 6.0 WATER QUALITY SAMPLING

(All samples collected from proposed new wells must be analyzed by a NH accredited laboratory for radon, low level 1,4-dioxane, plus all parameters required by the Safe Drinking Water Act (SDWA). These samples must be collected while the wells are still pumping, but near the end of the pumping test. See NHDES guidance on SDWA Sampling and Reporting. ***Additional sampling may be required*** *to evaluate contamination sources, justify a waiver or evaluate an existing water quality problem.)*

6.1 Sample Collection and Delivery

6.1a. Who is responsible for collecting water quality samples and delivering them to the laboratory?

Name Gilford Well Company with oversight of Edgewater Strategies

6.1b.How will the samples be stored and transported to the laboratory? *(VOC and bacteria samples must be kept cold.)*

In a cooler on ice.

6.2 Analyses and Laboratory

6.2a. **Sample Collection and Analyses**

Provide well numbers or names, when the samples will be collected and what parameters will be analyzed. *(Complete Table 6-1 for each well.)*

Table 6-1, PROPOSED WATER QUALITY SAMPLING

Well Name/Number	When Sample Will be Collected	Parameters to be Analyzed
BRW1	Within 10 hours of start-up ---------- Between 24-48 hours of pumping---------- Just before shutdown ---------- Hourly/ 12+ hours prior to shutdown ----------	25 PFAS analytes and VOCs 25 PFAS analytes and VOCs Full SDWA list, plus radon, low-level 1,4-dioxane, 25 PFAS analytes Field analysis for pH, Temp, Conductivity per MPA requirements.
*BRW2	Within 10 hours of start-up ---------- Between 24-48 hours of pumping---------- Just before shutdown ---------- Hourly/ 12+ hours prior to shutdown----------	25 PFAS analytes and VOCs 25 PFAS analytes and VOCs Full SDWA list, plus radon, low-level 1,4-dioxane, 25 PFAS analytes Field analysis for pH, Temp, Conductivity per MPA requirements.

* =If waiver request granted, BRW2 will not be pumped.

6.2b. What laboratory will analyze the samples and for which parameters? *(Complete Table 6-2 for each laboratory. The laboratory must have current accreditation in New Hampshire for performing the analyses using methods approved for the analysis for drinking water.)*

Table 6-2, PROPOSED LABORATORY

Laboratory	Certification Number	Analyses This Lab Will Perform
Nelson Analytical	Lab ID: 1005	Full SDWA list, low-level 1,4-dioxane
Alpha Analytical	Lab ID: 2062	25 PFAS analytes
Analytical Services	Lab ID: 2065	Microscopic Particulate Analysis

Section 7.0 REFINEMENT OF WELLHEAD PROTECTION AREA

(Refer to Env-Dw 305.21 and the guide, Applicant's Toolkit*, for a discussion of the standard method and reporting requirements.)*

Do you intend to use the default WHPA radii? *(Please note that small overburden wells require an analytical delineation method. This may affect how you design the pumping test. Contact the NHDES Community Well Siting program for guidance.)*
YES_X_ NO___

7.1 If **NO**, you need to provide a detailed proposal including technical justification. Provide the proposal on separate sheets and include **all** of the following information:

7.1a. Map showing preliminary WHPA.

7.1b. Description and justification for analytical groundwater delineation method.

7.1c. Description of additional data collection activities including the Pumping Test Program.

7.1d. Description and justification of how the data will be analyzed and reported.

7.2 If **YES,** identify the anticipated radius of each WHPA. *(Complete Table 7-1 for each well. The size of the WHPA will depend on the permitted production volume(s) of the well(s) and how they will be operated to meet source capacity requirements for the system.)*

WELLHEAD PROTECTION AREA RADII

Permitted Production Volume (gpd)	Radius (feet)
Zero to 7,200	1,300
7,201 to 14,400	1,500
14,401 to 28,800	2,050
28,801 to 43,200	2,850
43,201 to 57,599	3,600

Table 7-1, WELLHEAD PROTECTION AREAS

Well Name/Number	Proposed Permitted Production Volume (gpd)	WHPA Radius (ft)
BRW1	12,600 pgd	2,050 feet
BRW2	12,600 gpd	2,050 feet

WORKSHEET B: WAIVER APPLICATION

Project Name Harbor Landing Small CWS (DR00601) Project Town Moultonborough

Date 4/13/2022

Which section of the **rule** are you requesting be waived?
Env-Dw 305.14 (b)(3), Env-Dw 20(d) and Env-Dw 405.12(a)

Explain what, specifically, needs to be waived. Provide diagrams where helpful.
Utilizing the source capacity (2 times the design flow) as the withdrawal rate for the pumping test.

Describe what hardship would be caused if the rule were adhered to.
Performing the long-term test under the more conservative withdrawal rate is not necessary and only increase the threat of contamination migration from a down-gradient 20+ year old MtBE waste site that is under natural attenuation monitoring and a cross-gradient PFAS site with unknown sources, extents and is still under investigation. Any actual migration of contamination as a result of the proposed groundwater withdrawals is unknown. The likelihood of being able to develop the property as proposed without migration contamination maybe equal to or higher than the potential to migrate contamination. The property owner shall be given the opportunity to test at reasonable withdrawal rates to proved the design of the system us sustainable and to assess any adverse impacts and develop a mitigation plan, if warranted.

Explain the alternative solution in detail. Provide diagrams where helpful.
The withdrawal rate for the pumping test and permitted production value will be the design flow for the proposed development, not the more conservative source capacity (2 times the design flow). By approving this waiver, groundwater level and groundwater quality data will be collected that more accurately demonstrates long-term use of the proposed sources of supply while meeting other water system requirements of Env-Dw 305 and Env-Dw 405.

Explain how the alternative is consistent with the intent of the rules.
The design flow is the rate at which the water system components are designed per Env-Dw 405. The system will have a redundant well as required. Initial testing indicates the wells are high producing and each can yield much higher than the design flow; there are no concerns of long-term production loss from the wells.

Explain how the alternative would adequately protect human health and the environment.
The potential to cause a migration of contamination is greater at higher pumping rates. By approving this waiver, that threat decreases and provides more accurate groundwater level and groundwater quality data on the a more realistic (yet still considered conservative) long-term use of the proposed sources of supply. If potential adverse impacts are identified during the long-term test, and warranted, a mitigation plan is proposed to be developed.

ATTACHMENT C
EPA MARCH 2023 REPORT

PLYMOUTH STREET AREA SITE
ABBREVIATED PRELIMINARY ASSESSMENT
CENTER HARBOR, NEW HAMPSHIRE

EPA ID NO.: NHN000153333
STATE ID NO.: 202105043

FINAL REPORT
FOR
PLYMOUTH STREET AREA SITE
ABBREVIATED PRELIMINARY ASSESSMENT
CENTER HARBOR, NEW HAMPSHIRE

Prepared For:
U.S. Environmental Protection Agency
Region I
Superfund and Emergency Management Division
5 Post Office Square, Suite 100
Boston, MA 02109-3912

CONTRACT NO. 68HE0120D0001
TASK ORDER NO. 68HE0120F0027

EPA ID NO.: NHN000153333
STATE ID NO.: 202105043
TO/AD NO.: TOFP-01-21-07-0007
TASK NO.: 0103
DC NO.: A-50011

Submitted by:
Weston Solutions, Inc.
Region I
Superfund Technical Assessment and Response Team V (START)
101 Billerica Avenue, Building 5, Suite 103
North Billerica, Massachusetts 01862
March 2023

Region I START V
Reviewed and Approved:

Bonnie Mace — 3/30/2023
Bonnie Mace, Site Leader — Date

John F. Kelly — 3/30/2023
John F. Kelly, Project Leader/Deputy Program Manager — Date

Mandy Liao — 3/31/2023
Contract Officer Representative (COR) — Date

Work Order No. 40300.031.027.0103.70

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FOR
PLYMOUTH STREET AREA SITE
ABBREVIATED PRELIMINARY ASSESSMENT
CENTER HARBOR, NEW HAMPSHIRE

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John F. Kelly, Project Leader/Deputy Program Manager — Date

QA Review — 3/31/2023
QA Review — Date

Work Order No. 40300.031.027.0103.70

DISCLAIMER

This report was prepared solely for the use and benefit of the U.S. Environmental Protection Agency Region I (EPA Region I), Office of Superfund and Emergency Management Division (SEMD) for the specific purposes set forth in the contract between the EPA Region I and the Weston Solutions, Inc., (WESTON) Superfund Technical Assessment and Response Team V (START). Professional services performed and reports generated by START have been prepared for EPA Region I purposes as described in the START contract. The information, statements, and conclusions contained in the report were prepared in accordance with the statement of work, and contract terms and conditions. The report may be subject to differing interpretations or misinterpretation by third parties who did not participate in the planning, research, or consultation processes. Any use of this document or the information contained herein by persons or entities other than the EPA Region I shall be at the sole risk and liability of said person or entity. START, therefore, expressly disclaims any liability to persons other than the EPA Region I who may use or rely upon this report in any way or for any purpose.

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ACRONYM/ABBREVIATIONS LIST

%	Percent
AFFF	Aqueous film forming foam
AGQS	Ambient Groundwater Quality Standards
APA	Abbreviated Preliminary Assessment
AR	Alcohol Resistant
AST	Aboveground Storage Tank
bgs	Below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
ITRC	Interstate Technology Regulatory Council
MCL	Maximum Contaminant Level
ng/L	Nanograms per Liter
NH	New Hampshire
NHDES	New Hampshire Department of Environmental Services
No.	Number
NRCS	Natural Resources Conservation Service
PA	Preliminary Assessment
PFAS	Per- and polyfluoroalkyl substances
PFBA	Perfluorobutanoic Acid
PFBS	Perfluorobutane sulfonic Acid
PFHPA	Perfluoroheptanoic acid
PFHX	Perfluorohexanesulfonic Acid
PFHxA	Perfluorohexanoic acid
PFHxS	Perfluorohexane sulfonic Acid
PFNA	Perfluorononanoic Acid
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonic Acid
PFPEA	Perfluoropentanoic acid
PFPES	Perfluoropentane sulfonic Acid
POE	Point of Entry
PPE	Probable Point of Entry
ppt	Parts per trillion
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Information System
SEMD	Superfund and Emergency Management Division
SEMS	Superfund Enterprise Management System
SRS	Soil Remediation Standards
START	Superfund Technical Assessment and Response Team
SWP	Surface Water Pathway
SWPPP	Storm Water Pollution Protection Plan
TPH	Total Petroleum Hydrocarbons
UST	Underground Storage Tank
VOC	Volatile Organic Compound

Final Abbreviated Preliminary Assessment Report
Plymouth Street Area Site
Center Harbor, New Hampshire

EPA ID No.: NHN000153333
State ID No.: 202105043
TO/TDD No.: TOFP-01-21-07-0007
Work Order No.: 40300.031.027.0103.70

INTRODUCTION

The Weston Solutions, Inc., Superfund Technical Assessment and Response Team V (START) was requested by the U.S. Environmental Protection Agency (EPA) Region I, Superfund and Emergency Management Division (SEMD) to perform an Abbreviated Preliminary Assessment (APA) for the Plymouth Street Area Site located in Center Harbor, Belknap County, New Hampshire (NH), where per- and polyfluoroalkyl substances (PFAS) were detected in on-site groundwater supply wells [1; 2].

The Plymouth Road Area Site encompasses the residential area along Plymouth Street, Kelsea Avenue, and Kelley Court in Center Harbor, NH. The coordinates of the site, as measured from the approximate center of the area, located behind 56 Plymouth Street, are 43.70984 latitude, -71.46458 longitude [1-3, 11].

New Hampshire Department of Environmental Services (NHDES) is currently investigating a number of sites for the presence of PFAS in groundwater across NH. PFAS was originally detected in the Plymouth Road Area Site, Center Harbor, at a concentration exceeding NH's maximum contaminant levels (MCLs) in the public water system (PWS) well associated with Senters Market Condos along Route 25 (Main Street) [2; 22]. Subsequent sampling of 26 nearby private water supply wells for nine PFAS compounds by NHDES has identified concentrations of PFAS exceeding the Ambient Groundwater Quality Standards (AGQS) at eight residential homes: 56, 61, 62, and 67 Plymouth Street; 3, 4 and 9 Kelsea Avenue; and 32 Chase Circle. One additional PWS well located at the Center Harbor Inn, a commercial property at 294 Whitter Highway, was sampled and analyzed for four PFAS compounds (see Appendix C, Table 1) [2; 22].

This package follows the guidelines developed under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, commonly referred to as Superfund. However, these documents do not necessarily fulfill the requirements of other EPA Region I regulations such as those under the Resource Conservation and Recovery Act (RCRA) or other Federal, State, or local regulations. APAs are intended to provide a preliminary screening of sites to facilitate EPA Region I's assignment of site priorities. They are limited efforts and are not intended to supersede more detailed investigations.

The street addresses, coordinates, and contaminant locations presented in this APA report identify the general area in which the site is located. They represent one or more locations EPA considers to be part of the site based upon the screening information collected or generated in the course of this or previous investigation(s). The EPA Superfund Pre-Remedial Program is designed to identify "releases or threats of releases" of hazardous substances, and the focus of this investigation is on the release(s) or potential release(s), rather than precisely delineated site boundaries. A site is defined under the EPA Superfund Pre-Remedial program as the location in which a hazardous substance has been "deposited, stored, placed, or otherwise come to be located." EPA anticipates that the preliminary description of site boundaries will be refined as more information is developed regarding where the contamination has come to be located.

INVESTIGATION OBJECTIVES

Based on the Pre-CERCLA Screening, site history, and previous environmental sampling information for the area, the primary contaminants of concern for this APA are PFAS compounds in groundwater (drinking water) [2].

The objectives of this investigation are to collect appropriate, readily available information/data to identify and document the presence of PFAS detected in the study area; to identify and collect data to evaluate potential sources that could be contributing to the contamination observed; to discuss potential PFAS sources within/near the study area that may be impacting groundwater quality; and to evaluate if further assessment is recommended/warranted via the EPA Pre-Remedial program.

The investigation explores potential sources of PFAS releases where limited or no information currently exists, including potential on-site releases of PFAS within the study area; State permitted land application of sludge/biosolids on agricultural fields near the study area; contamination from landscaping materials containing PFAS compounds; past occurrences of fires, where PFAS compounds may have been utilized to extinguish the fires; and other sources in the proximity of the study area which may contain PFAS compounds, including possible potential waxing/washing materials introduced through sewer systems, Center Harbor Sewage Lagoon Reservoir, etc. [12; 41].

The investigation has achieved these objectives through research of site background information, site reconnaissance, evaluation and summary of the historical sample analytical data, and production of an APA Report and PA Form.

This document is intended to be a limited investigation to assess if further action is required under the EPA Pre-Remedial program and not to supersede other investigations. The PA is designed to distinguish between sites that pose little or no threat to human health and the environment and sites that require further investigation.

SITE DESCRIPTION

The Plymouth Road Area Site (the site) investigation consists of the examination of a PFAS contamination plume of unknown origins beneath the properties within the area of Plymouth Street, Kelsea Avenue, and Kelley Court, Center Harbor, NH (Appendix A, Figures 1 and 2) [1-3]. The coordinates of the site, as measured from the approximate center of the study area, located behind 56 Plymouth Street, are 43.70984 latitude, -71.46458 longitude [2; 3; 11].

The study area consists of 68 parcels, comprised mostly of residential properties, with a limited number of commercial and town properties located within an approximate 0.17-square-mile area in the southeastern portion of Center Harbor Village, NH (Appendix A, Figures 3 and 4) [2; 3; 41; 42]. NHDES sampled wells located on 26 of these 68 parcels in 2021 [22; 42]. This area includes the eastern portion of the residential zone and commercial Village District of Center Harbor [2; 22; 42]. The properties are within 2,000 feet of the shores of Lake Winnipesaukee and Whittier Highway, Center Harbor, NH [2; 22; 42]. The town encompasses an area of approximately 16.5 square miles and has a population of approximately 1,100 (as of 2018) and a population density of 74.4 people per square mile [2; 42; 43].

The boundaries of the site are unknown, but the study area boundaries are loosely based on the locations of samples containing PFAS compounds at detectable levels during the 2021 NH DES

sampling conducted in Center Harbor, and centered around the locations where detection of elevated levels of PFAS compounds were found to be above New Hampshire MCLs and/or AGQSs levels in groundwater samples [2; 22; 44; 45]. These elevated levels include groundwater collected from one public water system well/commercial property (Senters Market Condo) along Main Street and eight private residential drinking water wells at properties along Plymouth Street, Kelsea Avenue, and Chase Circle, Center Harbor, NH [22]. A general description of each of these parcels is provided below.

The 56 Plymouth Street property is located at 56 Plymouth Street in Center Harbor, Belknap County, NH and is identified by the Town of Center Harbor Tax Assessor as Map & Lot 102-055-000 [2; 4; 42]. The 0.79-acre property has a 4,294-square-foot (ft^2), wood-frame two-story residential building that was built in 1880 [4]. The residence is supplied potable water by a private well located on the property [4]. The residence is heated by oil and serviced by town sewer [2; 4; 42]. PFAS contamination was detected at elevated levels above NHDES standards in the on-site well on 4 March 2021 [22].

The 61 Plymouth Street property is located at 61 Plymouth Street in Center Harbor, Belknap County, NH and is identified by the Town of Center Harbor Tax Assessor as Map & Lot 102-025-000 [5; 42]. The 0.39-acre property has a 1,646-ft^2, wood-frame two-story residential building that was built in 1940 [5; 42]. The residence is supplied potable water by a private well located on the property [5;42]. The residence is heated by oil and serviced by town sewer [5; 42]. PFAS contamination was detected at elevated levels above NHDES standards in the on-site well on 24 March 2021 [22].

The 62 Plymouth Street property is located at 62 Plymouth Street in Center Harbor, Belknap County, NH and is identified by the Town of Center Harbor Tax Assessor as Map & Lot 102-054-000 [6; 42]. The 0.52-acre property has a 1,104-ft^2, wood frame single-story residential building that was built in 1972 [6; 42]. The residence is supplied potable water by a private well located on the property [6; 42]. The residence is heated by oil and serviced by town sewer [6; 42]. PFAS contamination was detected at elevated levels above NHDES standards in the on-site well on 4 March 2021 [22].

The 67 Plymouth Street property is located at 67 Plymouth Street in Center Harbor, Belknap County, NH and is identified by the Town of Center Harbor Tax Assessor as Map & Lot 102-026-000 [42;18]. The 0.64-acre property has a 1,605-ft^2, wood frame two-story residential building that was built in 1890 [42; 48]. The residence is supplied potable water by a private well located on the property [42; 48]. The residence is heated by oil and serviced by town sewer [42; 48]. PFAS contamination was detected at elevated levels above NHDES standards in the on-site well on 2 July 2021 [22].

The 3 Kelsea Avenue property is located at 3 Kelsea Avenue in Center Harbor, Belknap County, NH and is identified by the Town of Center Harbor Tax Assessor as Map & Lot 102-030-000 [42; 51]. The 0.51-acre property has a 2,174-ft^2, wood frame single-story residential building that was built in 1939 [42; 51]. The residence is supplied potable water by a private well located on the property [42; 51]. The residence is heated by oil and serviced by town sewer [42; 51]. PFAS contamination was detected at elevated levels above NHDES standards in the on-site well on 13 May 2021 [22].

The 4 Kelsea property is located at 4 Kelsea Avenue in Center Harbor, Belknap County, NH and is identified by the Town of Center Harbor Tax Assessor as Map & Lot 102-053-000 [7; 42]. The

0.37-acre property has a 2,033-ft^2, wood frame two-story residential building that was built in 1905 [7; 42]. The residence is supplied potable water by a private 205-foot bedrock well located on the property. The residence is heated by propane and serviced by town sewer [7; 42]. Based on a 2014 domestic drinking water well drilling log, the depth to bedrock is 15 feet below ground surface [7; 35; 42]. Static water level was not reported. PFAS contamination was detected at elevated levels above NHDES standards in the on-site well on 12 May 2021 [22].

The 9 Kelsea Avenue property is located at 9 Kelsea Avenue in Center Harbor, Belknap County, NH and is identified by the Town of Center Harbor Tax Assessor as Map & Lot 102-031-000 [8; 42]. The 0.27-acre property has a 1,434-ft^2, wood frame two-story residential building that was built in 1880 [8; 42]. The residence is supplied potable water by a private well located on the property [8; 42]. The residence is heated by oil and serviced by town sewer [8; 42]. PFAS contamination was detected at elevated levels above NHDES standards in the on-site well on 12 May 2021 [22].

The 32 Chase Circle property is located at 32 Chase Circle in Center Harbor, Belknap County, NH and is identified by the Town of Center Harbor Tax Assessor as Map & Lot 102-018-000 [38; 42]. The 0.71-acre property has a 1,452-ft^2, wood frame single-story residential building that was built in 1970 [38; 42]. The residence is supplied potable water by a private well located on the property [38; 42]. The residence is heated by propane and serviced by town sewer [38; 42]. PFAS contamination was detected at elevated levels above NHDES standards in the on-site well on 5 May 2021 [22].

The Senters Market Condo Association (Assoc.) property contains 14 commercial-condo properties located at 12 and 18 Main Street in Center Harbor, Belknap County, NH and is identified by the Town of Center Harbor Tax Assessor as Map & Lot 102-060-000; the 14 condos are listed as 102-060-001 through 102-060-014 [41; 42; 65]. The approximate 7.75-acre property contains a wood frame two-story attached commercial building that was built in 1988 [41; 42; 65]. The commercial properties are supplied potable water by a 200-foot-deep private community water well located on north-west portion of the property [32; 41; 42; 65]. The condos are heated by propane and serviced by town sewer [42; 65]. Based on a 2021 domestic drinking water/New Community well drilling log, the depth to bedrock is 26 feet below ground surface (bgs) [32]. Static water level was not reported. Based on a 1988 commercial drinking water well drilling log, the depth to bedrock is 260 feet bgs and static water level was reported to be 30 ft bgs [33]. A third well log for a well completed in 1988 at the Senters Market Inc, indicates the commercial well is 273 feet deep with a depth to bedrock at 15 feet and static water level at 15 feet [34]. PFAS contamination was detected in the Senters Market Condo PWS Well NH0396020 at elevated levels above NHDES standards on 4 January 2021, 22 April 2021, and 7 July 2021 [22; 44; 45].

The properties within the study area and surrounding the above-listed site properties include a mixture of commercial, residential, and wooded areas [41; 42]. The site is bisected by Plymouth Street (Route 25B) [2; 41; 42]. The study area is bounded to the north by residential properties and woodland areas; to the west by residential properties and woodland areas; to the south by Main Street, residential and commercial properties, and farther south by Lake Winnipesaukee; and to the east by residential properties, woodland areas, and the Town of Moultonborough, NH [2; 41; 42]. Additional residential and commercial properties are located along Main Street, including the Center Harbor Municipal Office Building, which also houses the Police and Fire Departments [2; 41].

Vehicle and pedestrian access to the site is unrestricted, although they are private residences [41].

It appears that all the residential properties in the study area are served by private on-site groundwater supply wells for potable water and are connected to the town sewer for sanitary waste disposal [41]. However, according to a former Town official, some properties may continue to have on-site septic systems that are utilized for some on-site buildings [41].

Approximately 466 people reside within 1-radial mile of the Plymouth Street Area Site [13]. The nearest residences are a part of the site [2; 41]. There are no known day-care facilities located within 0.25 miles of the site [41;52].

There is one public non-transient non-community (NTNC) system well located within 0.25-radial mile of the site, located at the Senters Market Condos, 12 Main Street, Center Harbor, NH (see Attachment A, Figure 2) [14; 22]. This well serves a population of 35 people [14]. There are approximately 545 people served by private wells located within 1 radial mile of the site [13]. The nearest private drinking water supply wells are located on the site, one at each of the eight residential properties discussed above [12; 13]. The nearest off-site private well is located less than 150 feet northwest of the intersection of Plymouth Street and Kelsea Avenue, along Dane Road [41].

The site is approximately 520 to 620 feet above mean sea level (amsl) [2; 42]. Lake Winnipesaukee has an elevation of 504 feet amsl (See Appendix A, Figure 1) [2; 30; 42]. The topography of the site is generally flat, sloping slightly southeast, and contains some hummocky terrain and non-designated wetland areas in the center of the study area [2; 41; 42]. The site falls into a Federal Emergency Management Agency (FEMA) minimal flood hazard area (Zone X) [15]. Zone X is a flood hazard area determined to be outside the 0.2% annual chance floodplain [15].

The eight residential properties comprising the site are located approximately between 1,200 feet and 1,800 feet northwest of the shores of Lake Winnipesaukee [2; 3; 41; 42]. In general, surface water from the residential properties infiltrates into the overburden materials on site [41]. A portion of overland flow on the residences may flow overland southeast and discharge into Lake Winnipesaukee [41]. The 15-mile downstream surface water pathway (SWP) from the Plymouth Street Area is part of the Lake Kanasatka-Lake Winnipesaukee Watershed and flows 15 miles downstream through Lake Winnipesaukee (see Appendix A, Figure 5) [2; 30; 41; 42]. The 15-mile SWP begins at the northern shore of Lake Winnipesaukee near Center Harbor Beach (24 Lake Street) and continues 15 miles into Lake Winnipesaukee, terminating south of Rattlesnake Island and extending east-west from Seawall Point on the east to Rum Point on the west side of the lake (see Appendix A, Figure 5) [2; 30; 41; 42]. The flow rate for discharge from Lake Winnipesaukee is 24,783 cubic feet per second [39].

Lake Winnipesaukee contains fisheries and is used for recreational boating and swimming [17; 53]. Sensitive environments, including wetlands, are associated with all water bodies located along the 15-mile downstream SWP [16].

Bedrock below the Plymouth Street Area Site is Winnipesaukee Tonalite (Dw3A), (Early Devonian) Gray, massive to foliated tonalite and minor quartz diorite, granodiorite, and granite. Probably coeval with Spaulding Tonalite [18; 19]. There is also Kinsman Granodiorite (Dk2x), (Early Devonian) Foliate granite, granodiorite, tonalite, and minor quartz diorite, large metacysts of potassium feldspar characteristic; garnet locally abundant [18; 19]. Based on the 2014 and 2021 well logs for wells installed within the site, depth to bedrock is approximately 15 to 26 feet bgs [25; 32-34]. Additional U. S. Geological Survey (USGS) and NH Water Well data indicate that depth to bedrock in the vicinity of the study area is between 7 and 90 feet bgs (21; 25-29; 35-37).

The majority of soils (81.4%) at the Plymouth Street Area are classified as map unit "Urban land, 0 to 8 percent slopes" by the Natural Resources Conservation Service (NRCS) [21]. Additional soils at the site include Naumburg loamy sand, 0 to 5 percent slopes (18.5%), and Becket fine sandy loam, 8 to 15 percent slopes, very stony (0.1%) [21]. The site is in a residential section of Center Harbor where groundwater is classified by NHDES as GB [40]. According to the 2014 Center Harbor Master Plan Update, the study area is within a stratified drift aquifer area with transmissivity of 0-1,000 ft/sq/day [42; 54]. Based on the well log for the well installed at the area in 1998 and 2021, depth to groundwater is approximately 25 feet bgs [25-29; 32-37]. Site observations and available groundwater data appear to indicate groundwater flow is to the southeast toward Lake Winnipesaukee [41]. There are no known federally listed or proposed threatened or endangered species or critical habitats present in proximity to the Plymouth Street Area [9].

OWNERSHIP, OPERATIONAL AND REGULATORY HISTORY

The Plymouth Street Area Site consists of eight residential properties with elevated levels of PFAS above state standards. Each of these properties has separate ownership, operations, and history: 56, 61, 62, and 67 Plymouth Street; 3, 4 and 9 Kelsea Avenue; and 32 Chase Circle [2; 4; 5-8; 38; 48; 51;42].

The 56 Plymouth Street property is currently owned by Donald P & Mary Ann Keay. The property consists of a 0.79-acre parcel containing a single-family residence that was built in 1880 [4;42]. Limited available historical information indicates that the property has been used as a residential unit since it was built [4; 42; 47]. The 56 Plymouth Street house was listed on the National Register of Historic Places as Part of the Center Harbor Village District in 1983 [4; 42;47]. When the tennis courts were installed, the excavations revealed subterranean tunnels between this house and the Coe House (located at 18 Main Street – current Senters Market Condo property) [42; 47]. These tunnels were reportedly used by the Underground Railroad [46]. The property has one on-site private groundwater drinking water supply well [4]. This well was found to have elevated levels of PFAS above the State's regulatory limit. Perfluorooctanoic acid (PFOA) was detected at 42 nanograms per Liter (ng/L) [equivalent to parts per trillion (ppt)] in the well sample collected from this property on 4 March 2021 [4; 22]. The sample exceeded the PFOA NH AGQS groundwater standard of 12 ng/L [4; 22; 44; 45]. No other regulatory history was discovered during the review of this property.

The 61 Plymouth Street property is currently owned by Eamon Cahall [5; 42]. The property consists of a 0.39-acre parcel containing a single-family residence that was built in 1940 with a large, attached barn converted to living and working space [5; 42]. Limited available historical information indicates that the property has been used as a residential unit since it was built [5; 42]. The property has one on-site private groundwater drinking water supply well [5; 22]. This well was found to have elevated levels of PFAS above the State's regulatory limit for PFOA of 12 ng/L [22]. PFOA was detected at 43.6 ng/L in the well sample collected from this property on 24 March 2021 [5; 22]. No other regulatory history was discovered during the review of this property.

The 62 Plymouth Street property is currently owned by Karen McLendon [6; 42]. The property consists of a 0.52-acre parcel containing a single-family residence that was built in 1972 [6; 42]. Limited available historical information indicates that the property has been used as a residential unit since it was built [6; 42]. The property has one on-site private groundwater drinking water

supply well [6]. This well was found to have elevated levels of PFAS above the State's regulatory limit for PFOA of 12 ng/L [6; 22]. PFOA was detected at 34 ng/L in the well sample collected from this property on 4 March 2021 [6; 22]. No other regulatory history was discovered during the review of this property.

The 67 Plymouth Street property is currently owned by Nicholas Eric Gagliardi and Elena Gagliardi [42; 48]. The property consists of a 0.64-acre parcel containing a single-family residence that was built in 1890 [42; 48; 49]. Limited available historical information indicates that the property has been used as a residential unit since it was built [42;48; 49]. A two-story cabin, which is roughly the same age as the house and is located to the southeast of the house, is believed to have once been a blacksmith's shop [42; 49]. A stable for riding horses was also located on this property in approximately 1904 [42; 47; 49; 50]. The property has one on-site groundwater private drinking water supply well [42; 49]. This well sample was found to have elevated levels of PFAS above the State's regulatory limit for PFOA of 12 ng/L [22; 42; 44; 45]. PFOA was detected at 36 ng/L in the well sample collected from this property on 2 July 2021 [22; 42]. No other regulatory history was discovered during the review of this property.

The 3 Kelsea Avenue property is currently owned by Ronald E. & Deborah L. Ulm [42; 51]. The property consists of a 0.51-acre parcel containing a single-family residence that was built in 1939 [42; 51]. Limited available historical information indicates that the property has been used as a residential unit since it was built [42;51]. The property has one on-site private groundwater drinking water supply well [42; 51]. This well was found to have elevated levels of PFAS above the State's regulatory limit for PFOA of 12 ng/L [22; 42; 44; 45]. PFOA was detected at 18 ng/L in the well sample collected from this property on 13 May 2021 [22; 42]. No other regulatory history was discovered during the review of this property.

The 4 Kelsea Avenue property is currently owned by Jesse D & Jaime M Jenkins [7; 42]. The property consists of a 0.37-acre parcel containing a single-family residence that was built in 1905 [7; 42]. Limited available historical information indicates that the property has been used as a residential unit since it was built [7; 42]. The property has one on-site private groundwater drinking water supply well [7; 25; 42]. This well was found to have elevated levels of PFAS above the State's regulatory limit for PFOA of 12 ng/L [7; 22; 44; 45]. PFOA was detected at 27 ng/L in the well sample collected from this property on 12 May 2021 [22; 42]. No other regulatory history was discovered during the review of this property.

The 9 Kelsea Avenue property is currently owned by Mathew L Wallace and Riley E Lacasse [8; 42]. The property consists of a 0.27-acre parcel containing a single-family residence that was built in 1880 [8; 42]. Limited available historical information indicates that the property has been used as a residential unit since it was built [8; 42]. The property has one on-site private groundwater drinking water supply well [8; 42]. This well sample was found to have elevated levels of PFAS above the State's regulatory limit for PFOA of 12 ng/L [8; 22; 44; 45]. PFOA was detected at 31 ng/L in the well sample collected from this property on 12 May 2021 [22; 42]. No other regulatory history was discovered during the review of this property.

The 32 Chase Circle property is currently owned by Philip Boivin -Trust & Philip T Boivin Rev Trust [38; 42]. The property consists of a 0.71-acre parcel containing a single-family residence that was built in 1970 [38; 42]. Limited available historical information indicates that the property has been used as a residential unit since it was built [38; 42]. However, prior to the residence being built on the property, the land was used as a horse pasture and agricultural field [38; 42; 47]. The property has one on-site groundwater private drinking water supply well [38; 42]. This well was

found to have elevated levels of PFAS above the State's regulatory limit for PFOA of 12 ng/L [38; 22; 44; 45]. PFOA was detected at 46.4 ng/L in the well sample collected from this property on 20 May 2021 [38; 22]. No other regulatory history was discovered during the review of this property.

Per EPA direction, this APA assignment is focused on PFAS contamination, and the following section will concentrate on site history as it relates to PFAS operational and regulatory history of the properties comprising the site. However, it is noted that other properties in the immediate area may also be contributing to the local PFAS contamination issues, including the Senters Market Condos, Center Harbor Fire Department, Hanson Hilltop Farm, the Legion of Christ property (former La Salette School), the Center Harbor Sewage Lagoon Reservoir, and other possible sources [41]. PFAS compounds have been widely used around the world since the 1950s to make products that resist heat, stains, grease, and water. They have been used in coatings for textiles, paper products, and cookware; in some firefighting foams; and have a range of applications in the aerospace, photographic imaging, semiconductor, automotive, construction, electronics, and aviation industries [64]. Potential releases of PFAS-containing materials associated with the Plymouth Street Area site may include inadvertent use/spills of Class B Alcohol Resistant Aqueous Film Forming Foam (AR-AFFF) (containing PFAS); State permitted land application of sludge/biosolids containing PFAS; contaminated soil from landscaping materials containing biosolids with PFAS compounds; past local fire occurrences (where Class B AFFF may have been used); potential PFAS-containing waxes/floor cleaning materials released to sewage systems/leach fields; and potential PFAS-contaminated sewage releases to groundwater.

PFAS was originally detected in the Plymouth Road Area Site at a concentration exceeding NH's MCLs in the PWS well associated with Senters Market Condos along Route 25 [2; 22]. Subsequent sampling of 26 nearby private water supply wells for nine PFAS compounds by NHDES has identified concentrations of PFAS exceeding the AGQS at eight residential homes: 56, 61, 62, and 67 Plymouth Street; 3, 4 and 9 Kelsea Avenue; and 32 Chase Circle [2; 4; 5-8; 22; 38; 42; 48; 51]. One additional public water system well located at the Center Harbor Inn, a commercial property at 294 Whitter Highway, was sampled and analyzed for four PFAS compounds in 2016 [2; 22].

Analytical results of samples collected from the drinking water supply well at the Senters Market Condominiums, located at 12 Main Street, Center Harbor, on 4 January 2021, indicated PFOA at 14.6 ng/L [2; 22]. The multi-unit condominium is on a private potable water supply well system and has PFAS above NH's health-based standards MCLs and AGQS of 12 ng/L [2; 22; 44; 45; 65]. The well was tested again on 22 April 2021 and 7 July 2021 and found to contain PFOA at 15 ng/L and 19 ng/L, respectively [22].

Subsequent sampling and analysis of 26 nearby private water supply wells from 4 March 2021 to 28 September 2021 indicated PFOA concentrations ranging between less than 2 ng/L to 46.6 ng/L [2; 22; 42]. Eight of the 26 residential well samples exceeded the NHDES MCL/AGQS value for PFOA [22; 44; 45]. All other PFAS compounds were below the NHDES MCL/AGQS values [22; 44; 45].

In May 2016, EPA issued a revised draft health advisory for two PFAS compounds, PFOA and Perfluorooctane Sulfonic Acid (PFOS) [66]. The health advisory recommends that drinking water, containing more than 70 parts-per-trillion combined, not be consumed. The NHDES reviewed this information and adopted an enforceable groundwater quality and drinking water standard for PFOA and PFOS in May 2016 that was consistent with EPA's health advisory [66].

After adopting the standard for PFOA and PFOS, NHDES sent a letter to owners of community water systems and non-transient public water systems notifying them about the potential for PFAS in drinking water. In the letter, NHDES requested that the water systems voluntarily sample their sources of water for PFAS and voluntarily share the sampling results with NHDES [66].

In 2019, NHDES adopted rules that established health-based drinking water standards or MCLs and AGQS for four PFAS compounds: 12 ng/L for PFOA, 15 ng/L for PFOS, 18 ng/L for Perfluorohexanesulfonic acid (PFHxS), and 11 ng/L for Perfluorononanoic Acid (PFNA) [68]. The effective date upon which the rules became enforceable standards was 30 September 2019 [68]. However, effective 31 December 2019, the Merrimack County Superior Court issued a preliminary injunction barring enforcement of these rules due to the alleged failure of NHDES to appropriately consider the costs and benefits of the rules [68]. While enforcement of these standards was temporarily stayed by a court injunction, the MCLs and AGQS were established as a matter of law by House Bill 1264, which became effective 23 July 2020. MCLs are drinking water quality standards that non-transient public water systems (water systems serving the same 25 people more than 6 months per year) must comply with. An AGQS is the standard used to require site investigations and remedial action at and around contamination sites [73, 74].

On 4 March 2021, a water sample was collected from the 56 Plymouth Street on-site drinking water supply well and analyzed for PFAS compounds [22]. According to NHDES, analytical results indicated that detectable levels of PFAS were found [22]. Results indicated concentrations of PFOA at 42 nanograms per Liter (ng/L); PFOS at 0.92 ng/L; PFNA at 1.6 ng/L; and PFHxS at <1.9 ng/L (see Attachment C, Table 1) [22]. Currently, NHDES has health-based MCLs and AGQS for four PFAS compounds: PFOA (12 ng/L), PFOS (15 ng/L), PFHxS (18 ng/L) and PFNA (11 ng/L) [22; 44; 45]. Sampling results indicate that the PFOA concentration detected was above the NH DES MCL and AGQS of 12 ng/L [22; 44; 45].

On 4 March 2021, a water sample was collected from the 62 Plymouth Street on-site drinking water supply well and analyzed for PFAS compounds [22]. According to NHDES, analytical results indicated that detectable levels of PFAS were found [22]. Results indicated concentrations of PFOA at 34 ng/L; PFOS at 1.3 ng/L; PFNA at 0.9 ng/L; and PFHxS at 0.54 ng/L (see Attachment C, Table 1) [22; 44; 45]. Sampling results indicate that the PFOA concentration detected was above the NH DES MCL and AGQS of 12 ng/L [22; 44; 45].

On 24 March 2021, a water sample was collected from the 61 Plymouth Street on-site drinking water supply well and analyzed for PFAS compounds [22]. According to NHDES, analytical results indicated that detectable levels of PFAS were found [22]. Results indicated concentrations of PFOA at 43.6 ng/L; PFOS at <2 ng/L; PFNA at <2 ng/L; and PFHxS at <2 ng/L (see Attachment C, Table 1) [22]. Sampling results indicate that the PFOA concentration detected was above the NH DES MCL and AGQS of 12 ng/L [22; 44; 45].

On 12 May 2021, a water sample was collected from the 4 Kelsea Avenue on-site drinking water supply well and analyzed for PFAS compounds [22]. According to NHDES, analytical results indicated that detectable levels of PFAS were found [22]. Results indicated concentrations of PFOA at 27 ng/L; PFOS at 1.7 ng/L; PFNA at 1.2 ng/L; and PFHxS at 0.58 ng/L (see Attachment C, Table 1) [22]. Sampling results indicate that the PFOA concentration detected was above the NH DES MCL and AGQS of 12 ng/L [22; 44; 45].

On 12 May 2021, a water sample was collected from the 9 Kelsea Avenue on-site drinking water supply well and analyzed for PFAS compounds [22]. According to NHDES, analytical results

indicated that detectable levels of PFAS were found [22]. Results indicated concentrations of PFOA at 31 ng/L; PFOS at 1.6 ng/L; PFNA at 1.1 ng/L; and PFHxS at 0.5 ng/L (see Attachment C, Table 1) [22]. Sampling results indicate that PFOA concentration detected was above the NH DES MCL and AGQS of 12 ng/L [22; 44; 45].

On 13 May 2021, a water sample was collected from the 3 Kelsea Avenue on-site drinking water supply well and analyzed for PFAS compounds [22]. According to NHDES, analytical results indicated that detectable levels of PFAS were found [22]. Results indicated concentrations of PFOA at 18 ng/L; PFOS at 2.7 ng/L; PFNA at 0.83 ng/L; and PFHxS at <1.8 ng/L (see Attachment C, Table 1) [22]. Sampling results indicate that the PFOA concentration detected was above the NH DES MCL and AGQS of 12 ng/L [22; 44; 45].

On 2 July 2021, a water sample was collected from the 67 Plymouth Street on-site drinking water supply well and analyzed for PFAS compounds [22]. According to NHDES, analytical results indicated that detectable levels of PFAS were found [22]. Results indicated concentrations of PFOA at 36 ng/L; PFOS at <2 ng/L; PFNA at <2 ng/L; and PFHxS at <2 ng/L (see Attachment C, Table 1) [22]. Sampling results indicate that the PFOA concentrations detected were above the current NHDES proposed MCL of 12 ng/L [22; 44; 45].

See Waste Characteristics Section for additional details.

Table 1 presents identified structures or areas associated with the Plymouth Street Area that are documented or potential sources of contamination, the containment features associated with each source, and the relative location of each source.

Table 1

Source Evaluation for Potential PFAS at the Plymouth Street Area

Source Area	Containment Features	Spatial Location
Inadvertent Use/Spills - Class B AR-AFFF (containing PFAS)	None	Center Harbor Fire Department – 36 Main Street
Inadvertent Use/Spills - Class B AR-AFFF (containing PFAS)	None	Center Harbor Fire Department Training Area (former ice rink) - 24 Lake Street
State permitted land application of sludge/biosolids	None	Hanson Hilltop Farm Agricultural fields near the study area
Potential PFAS-Contaminated Soil from landscaping materials containing biosolids with PFAS compounds	None	Unknown residential properties in study area – unknown locations
Past Fire Occurrence (where PFAS foams may have been used)	None	53 Plymouth Street - "Boarding House Fire" in 2007
Past Fire Occurrence (where PFAS foams may have been used)	None	12-18 Main Street - Senters Market Condo Property Car Fire – fire occurred in late-2000s
Past Fire Occurrence (where PFAS foams may have been used)	None	12-18 Main Street - Harper House Dormitory Fire, Belknap College (Senters Market Condo property) - 1972
Potential PFAS-Contaminated Residential Sewage Systems/Leach Field Releases	None	Unknown - Potential residential units not connected or using old on-site sewage systems (cisterns, septic fields, etc.)
Potential PFAS-Containing Wax/Floor Cleaning Material Sewage Systems/Leach Field Releases	None	Unknown - Legion of Christ Buildings (former La Salette School) not connected or using old on-site sewage systems (cisterns, septic fields, etc.)
Potential PFAS-Contaminated Sewage Release to Groundwater	None	Unknown – Possible Releases from the Center Harbor Sewage Lagoon Reservoir

AR-AFFF = Alcohol-resistant aqueous film forming foam
PFAS = Per- and polyfluoroalkyl substances
GW = Groundwater
[1; 2; 41; 42; 43]

Table 2 summarizes the types of potentially hazardous substances which have been disposed of, used, or stored on the areas associated with the Plymouth Street Area.

Table 2

Hazardous Waste Quantity for the Plymouth Street Area

Substance	Quantity or Volume/Area	Years of Use/Storage	Years of Disposal	Source Area
PFAS	Unknown	Unknown – potentially 1980 - present	Unknown	Inadvertent Use/Spills - Class B AR-AFFF (containing PFAS)
PFAS	Unknown	Unknown – potentially 1980 - present	Unknown	Inadvertent Use/Spills - Class B AR-AFFF (containing PFAS)
PFAS	Unknown	1995-1998	Not Applicable	State permitted land application of sludge/biosolids
PFAS	Unknown	Unknown	Unknown	Potential PFAS-Contaminated Soil from landscaping materials containing PFAS compounds
PFAS	Unknown	2007	2007	Past Fire Occurrence (where PFAS foams may have been used) - "Boarding House Fire"
PFAS	Unknown	Late-2000s	late-2000s	Past Fire Occurrence (where PFAS foams may have been used) – Car Fire
PFAS	Unknown	1972	1972	Past Fire Occurrence (where PFAS foams may have been used) - Dormitory Fire
PFAS	Unknown	1950 - present	1950 - present	Potential PFAS-Contaminated Residential Sewage Systems/Leach Field Releases
PFAS	Unknown	1950 - present	1950 - present	Potential PFAS-Containing Wax/Floor Cleaning Material Sewage Systems/Leach Field releases
PFAS	Unknown	1972 - present	1972 - present	Potential PFAS-Contaminated Groundwater (GW) Plume

AR-AFFF = Alcohol-resistant aqueous film forming foam
PFAS = Per- and polyfluoroalkyl substances
[1; 2; 12; 41; 42; 43]

On 14 June 2021, EPA completed a Pre-CERCLA Screening Checklist/Decision Form, adding Plymouth Street Area to the Superfund Enterprise Management System (SEMS) for further assessment [2].

On 26 July 2021, EPA issued an Allocation Document (AD) to START to initiate an Abbreviated Preliminary Assessment (APA) at the site.

On 22 September 2021, START personnel conducted a reconnaissance of the site, including the Center Harbor Fire Department Garage area, and properties within the study area. START personnel also met with the Town representative to discuss the investigation and any potential occurrence of PFAS materials/releases within the study area.

On 14 February 2023, a Potential Hazardous Waste Site PA Form was completed for the Plymouth Street Area [31].

The Plymouth Street Area is the only CERCLA site in Center Harbor, NH, listed in the SEMS database [62]. There is only one site located in Center Harbor, NH listed in the Resource Conservation and Recovery Act Information System (RCRIS) [63].

WASTE CHARACTERISTICS AND CONCEPTUAL SITE MODEL

PFAS are used in many industrial and consumer applications, which may have released PFAS into the environment and impacted drinking water supplies in the study area. Based on available information, including analytical data for samples collected within the study area, the current START conceptual model assumes that a release containing PFAS compounds occurred at or within the vicinity of the intersection of Plymouth Street and Kelsea Avenue through a currently unidentified source. PFAS compounds migrate through the unsaturated overburden material into the groundwater. The characteristics of these compounds tend to tie them up in the unsaturated zone, causing them to persist in subsurface soils and slowly infiltrate into the groundwater. Once in the groundwater, the PFAS compounds migrate through the overburden aquifer and into the bedrock aquifer. PFAS compounds continue to migrate through the available bedrock fractures and are pulled into the bedrock wells in the area via well pumping.

START review of the available background information indicates that limited environmental investigations and sampling for PFAS compounds have been conducted at the Plymouth Street Area. Groundwater samples have been collected and analyzed for PFAS from wells on the Plymouth Street Area Site, other residential properties, and other local facilities in the immediate area, including the Senters Market Condo, and the Center Harbor Inn.

As noted above, no historical releases have been documented as occurring on any property comprising the Plymouth Street Area Site. However, limited investigations of the source of the PFAS compounds have been conducted, and groundwater sampling results in the vicinity of the Plymouth Street Area, and immediate surrounding areas, have indicated low levels of PFAS compounds, with eight properties showing PFOA concentrations above State MCLs and AGQS standards. No known private residential groundwater wells have been investigated to further delineate the magnitude of the PFAS contamination.

As noted above, PFAS compounds have been widely used around the world since the 1950s to make products that resist heat, stains, grease, and water [10; 64]. PFAS compounds contain unique ability to repel oil, water and stains, and these chemicals have been used in surface protection products, such as carpet, upholstery, and leather treatments; and in industrial surfactants, emulsifiers, wetting agents, and as additives in detergents, soaps, paints, waxes, foaming agents and anti-fog materials, for cleaning materials of fabrics and surfaces materials, and may be used in vehicle maintenance and/or cleaning operations on the properties [10;64]. To date, there is no

known documentation of PFAS compound use or releases at the residential site properties based on the limited information [41].

Potential releases of PFAS-containing materials associated with operations within or near the study area may include AFFF foam used for firefighting; consumer uses of PFAS-containing materials resulting in the discharge of PFAS to the municipal sewage lagoon reservoirs, prior to further wastewater treatment, and/or discharges to private septic systems within the study area; municipal sewage sludge used for biosolids applications applied to agricultural land; and biosolids used in application of commercial landscaping activities at private residential, commercial, and municipal properties. Some data has indicated that the terminal PFAS compounds, PFOS and PFOA, were among the most frequently detected PFAS in wastewater [32].

The Center Harbor Fire Department is located at 36 Main Street, Center Harbor, approximately 0.2 mile southeast of the intersection of Plymouth Street and Kelsea Avenue [1;41; 42]. During a site reconnaissance on 22 September 2021, START members conducted a reconnaissance of the Center Harbor Municipal Office/Fire Department building at 36 Main Street, which houses the Center Harbor fire department vehicles and equipment [41]. The fire department has two engines which are equipped with 30-gallon tanks for fire-fighting foam [41]. START observed one 5-gallon Sil-ex Class A firefighting foam, and 2.5 5-gallon containers of Phos-Chek (approximately 12.5 gallons) Class A AFFF stored on site within the fire station garage [41]. Class A firefighting foam agents are specifically designed to combat fires involving ordinary combustible materials, like wood, paper, coal, rubber, and plastic, by making water more effective [10; 67]. The agents reduce the surface tension of water providing superior wetting and penetrating characteristics [10; 67]. This allows the solution to penetrate deep into the char of deep-seated fires, promoting cooling and making the Class A fuel-less combustible [67]. The expanded foam solutions also create a dense foam blanket that provides an insulating barrier between the fuel and the air. Class A Foams do not contain PFAS materials [67]. START personnel did not observe any Class B firefighting foam (also called AR-AFFF) during the reconnaissance of the fire department garage [41]. Class B AR-AFFF do contain PFAS [10; 67; 69]. According to a Fire Department representative, the Class A foams stored on site do not contain PFAS [41]. Information provided from fire department representative indicates that the Center Harbor Fire Department has never used AR-AFFF on site or in the fire-training area (the former ice rink) south of Main Street (24 Lake Street) [1; 41; 42]. According to a fire department representative, to the best of his knowledge, the Center Harbor fire department has never used AR-AFFF during any fire incidents in town, during his 6-year tenure; nor is he aware of it being used prior to that time for an actual firefighting response or during any town training exercises [41]. The Class A Foam storage containers are separated from other materials within the facility [41]. According to a Fire Department representative, the fire hoses are cleaned and dried on the fire department garage apron [41]. The apron runoff is collected via catch basins in a closed loop system on the property [41].

No documented PFAS-containing materials have been observed or documented to be stored on site at the Center Harbor Fire Department [41]. However, considered unlikely, START has not been able to confirm that no Class B AFFF materials have been stored or used by the Center Harbor Fire Department since its introduction in approximately the 1950s [41]. Therefore, there remains a possibility that PFAS may have been released through inadvertent spill(s) of Class B AR-AFFF material at the Fire Department, but this has not been documented to date. Furthermore, the on-site drinking water well, located north of the fire station, has been tested for PFAS and found to be below the analysis reporting limit (see Appendix C, Table 1) [22; 41; 42].

Center Harbor Fire Department records and information from fire department and town representatives indicates multiple fires in the vicinity of Plymouth Street, including the "Boarding House Fire" in 2007, Senters Market Condo Car Fire in the late 2000s, and the Belknap College dormitory fire in 1972 [41; 47; 59; 60].

"Boarding House Fire" occurred in 2007 at 53 Plymouth Street [41; 42; 47; 59; 60]. This building served as the Hedgecroft boarding house in the early 20th century, absorbing overflow from Garnet Inn [47;59]. In the 1960s, the building was used as the Woodbridge dormitory for Belknap College [59]. In 1976, after the college closed, the interior of the house was rebuilt [47; 59]. Later in 2007, according to the information obtained, a fire occurred in the front section of the boarding house and destroyed a portion of the interior [41; 47; 59]. The house sat untouched for some time until, finally, repairs and remodeling were completed [41; 59]. According to a Fire Department representative, AFFF was not likely used on the fire [41]. START noted that analysis of the groundwater sample collected from the on-site well at 53 Plymouth Street did indicate detectable levels of PFAS compounds and the property is located in close proximity to the residential properties with elevated levels of PFAS above State standards [22].

A car fire reportedly occurred in the parking lot of Senters Market Condo Assoc. property on an unknown date [41]. However, according to the fire department representative, this fire occurred in the late-2000s [41]. No additional details were available regarding this car fire. The fire department representative noted that he did not believe AFFF was used on this car fire but could not confirm this information [41].

The third fire occurred in the study area, within a college dormitory on 9 November 1972, on what is now the Senters Market Condo Assoc. property [41; 56; 57]. This fire occurred in a student multi-story dormitory building, Harper House, owned by Belknap College [41; 57]. The large fire reportedly required 14 fire engines to respond, including engine units from several surrounding towns [41; 57]. The building was destroyed, and 26 students and two house-parents lost all their possessions in the fire [57]. According to the Center Harbor Fire department representative, he does not believe AFFF foam would have been used on the fire [41]. No additional records were available regarding the fire. Belknap College closed in 1973 [58].

A possible source of PFAS contamination in the area is consumer use of PFAS-containing materials and disposal of them via private septic systems. Consumer materials containing PFAS compounds could vary widely. Although according to a 1995 Bay Sewage District Map and information provided by a former Town of Center Harbor Official, it appears that all residential and commercial properties in the study area are likely connected to the municipal sewer system [41; 70]. However, the town official noted that it is possible that some properties may continue to have a portion of their waste stream discharging to old private septic systems [41]. For example, the Immaculate Conception School (now the Legion of Christ Property) completed multiple expansions, renovations, and new connections to the municipal sewer system between 1995 and 2009, but she noted that it was possible that some of the buildings on the campus could have remained connected to the original individual on-site septic systems and continued to discharge to old private systems [41; 70]. Based on further discussion regarding the campus activities and building use, requiring a large maintenance/cleaning program likely utilizing cleaner and waxes containing PFAS compounds, and on the observed proximity of the campus with respect to the properties with elevated PFAS detections above State standards, it appears that this potential PFAS source area remains possible, but unconfirmed [41].

Another possible source of PFAS contamination in the area is consumer use of PFAS-containing materials and then disposal of them into the municipal sewage system. In this scenario, PFAS-contaminated waste flows through the municipal sewer lines (Bay Sewerage District Lines) and is transported and discharged to the Center Harbor Sewage Lagoon Reservoirs, located approximately 0.5 miles northeast of the intersection of Plymouth Street and Kelsea Avenue and the site [1;41;42]. PFAS materials could be released as a result of a break in the sewer line or via seepage of PFAS out of the three lagoons and migrating to the southwest in the groundwater. The former town official did not recall any historical breaks in the sewer line near the intersection of Plymouth Street and Kelsea Avenue [41]. Based on further discussions with an NHDES hydrogeologist and Sludge and Septage Coordinator, although no PFAS sampling has been conducted in association with the lagoons or the monitoring wells around the lagoons, based on the bedrock geology, groundwater flow direction and distance, it is unlikely that water seeping out of the three large lagoons would be impacting the properties comprising the site [71; 72]. However, the release of PFAS compounds at or near the site as a result of a break in the sewer line is a possibility and may warrant further investigation.

Biosolids are primarily organic materials produced during wastewater treatment which may be put to beneficial use generally as fertilizer [55]. Based on the available information, State permitted biosolids applications were applied to agricultural land at the Hanson Hilltop Farm property, located within 0.5 miles of the eight properties comprising the site [12]. NHDES Class A Sludge Summary records for the Hanson Hilltop Farm, Home Field, indicate that a total of 38.9 total wet tons (equivalent to 14.09 total dry tons) of biosolids were applied across three spreadable acres during 2013 [12]. Class A Biosolids is a designation for dewatered and heated sewage sludge that meets U.S. EPA guidelines for land application with no restrictions [55; 56]. Thus, Class A biosolids can be legally used as fertilizer on farms, vegetable gardens, and can be sold to home gardeners as compost or fertilizer [55; 56]. NHDES Class B Sludge Summary records for the Hanson Hilltop Farm, Home Field indicate that a total of 125.66 total wet tons (equivalent to 29.79 total dry tons) of biosolids were applied across three spreadable acres during 1995, 1996, and 1998, and 2005 [12]. Class B biosolids have undergone treatment that has reduced but not eliminated pathogens [55; 56]. By definition, Class B biosolids may contain pathogens [55; 56]. PFAS may also accumulate in the biosolids, which are then land-applied as fertilizer, creating a potential large source area, with new contaminated source material being added repeatedly with each new application [12; 55; 56]. Discussions with NHDES personnel indicate that the volume of biosolids applied near the site is not a significant volume but remains a possible contributing source of PFAS releasing to the soil and migrating to the drinking water aquifer and residential well [12; 41].

Similar to the above land application of biosolids, there are two known large landscaping companies in Moultonborough, NH (the next town to east) which have historically bought Merrimack Wastewater Treatment Plant (WWTP) and Hawk Ridge Compost [12]. Both compost products are an in-vessel composted biosolid [12]. They each reportedly utilize up to 3,000 cubic yards of compost annually in the area on residential and commercial landscape projects [12]. The spread of these materials across one or multiple properties in the study area may result in PFAS contamination seeping into the overburden material, migrating down into the groundwater aquifers, and then being pulled into the private groundwater wells via residential well pump systems. Further investigation may be warranted to determine if any of the properties may be utilizing landscaping materials made of composited biosolids and spread on their property on a routine basis.

Furthermore, the presence of nine PFAS compounds were found above detectable levels in groundwater well from 28 properties. One individual compound, PFOA, has been detected above

current State health-based MCLs and AGQS standards in groundwater samples collected from eight on-site private drinking water wells and one PWS well. The detection of these elevated levels of PFOA may warrant further investigation activities to assess the public safety of additional groundwater wells in the vicinity. However, determining the original source may be impossible due to the characteristics and the preferential migration of PFAS through the subsurface materials and aquifers.

SUMMARY AND CONCLUSIONS

The Weston Solutions, Inc., Superfund Technical Assessment and Response Team V (START) was requested by the U.S. Environmental Protection Agency (EPA) Region I, Superfund and Emergency Management Division (SEMD) to perform an Abbreviated Preliminary Assessment (APA) for the Plymouth Street Area in Center Harbor, New Hampshire (NH), where per- and polyfluoroalkyl substances (PFAS) compounds of unknown origin were detected in on- and off-site private and public water system (PWS) drinking water supply well samples. The Plymouth Road Area Site encompasses the residential area in the vicinity of Plymouth Street, Kelsea Avenue, and Kelley Court in Center Harbor, NH. The study area consists of 68 parcels, comprised mostly of residential properties, with a limited number of commercial and town properties located within an approximate 0.17-square-mile area in the southeastern portion of Center Harbor. NHDES sampled wells located on 26 of these 68 parcels in 2021. The Plymouth Street Site currently consists of the eight residential properties (56, 61, 62, and 67 Plymouth Street; 3, 4 and 9 Kelsea Avenue; and 32 Chase Circle) where the concentrations of PFAS compounds, specifically Perfluorooctanoic Acid (PFOA), exceed State Maximum Contaminant Levels (MCLs) and Ambient Groundwater Quality Standards (AGQS).

As noted above, no historical PFAS on-site use or releases have been documented as occurring on any of these eight residential properties comprising the Plymouth Street Area Site. However, limited investigations of the source of the PFAS compounds have been conducted; and NHDES groundwater sampling results in the vicinity of the Plymouth Street Area have indicated detectable levels of PFAS compounds below the State MCLs and AGQS standards at several other properties in the study area.

Based on analytical data, review of available information, and discussions with persons knowledgeable of the Center Harbor and/or PFAS contamination, START was able to identify several potential sources, although there may be others not identified in the investigation. The potential sources include inadvertent use/spills of Class B Alcohol Resistant Aqueous Film Forming Foam (AR-AFFF) containing PFAS at the fire department or training area; State permitted land application of sludge/biosolids at a local farm; contaminated soil resulting from use of landscaping materials containing biosolids with PFAS; multiple past fire occurrences (where PFAS foams may have been used); PFAS-contaminated materials entering residential sewage systems/leach field system and discharging as point source releases; PFAS-containing floor waxes/cleaners entering sewage systems/leach field system and discharging as point source releases (such as from the Legion of Christ property); and PFAS-contaminated sewage release to groundwater via line break/leaks or seepage from Center Harbor Sewage Lagoon Reservoir.

START notes that there is no evidence at this time to document that any of the above potential sources have resulted in the PFAS levels detected above State standards in groundwater wells. Therefore, START suggests that future investigations may be warranted to test the validity of some or all of these potential sources, and to conduct additional groundwater sampling for PFAS analysis from residential wells in the vicinity, not previously sampled, to ensure that the quality of potable water being consumed by residents is not above State health-based benchmarks in drinking water.

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ATTACHMENT A

PLYMOUTH STREET AREA SITE
FIGURES

Figure 1 **Site Location Map**
Figure 2 **Site Diagram**
Figure 3 **Project Study Area**
Figure 4 **NHDES PFAS Analytical Results for Groundwater Wells Center Harbor, NH**
Figure 5 **Surface Water Pathway Map**

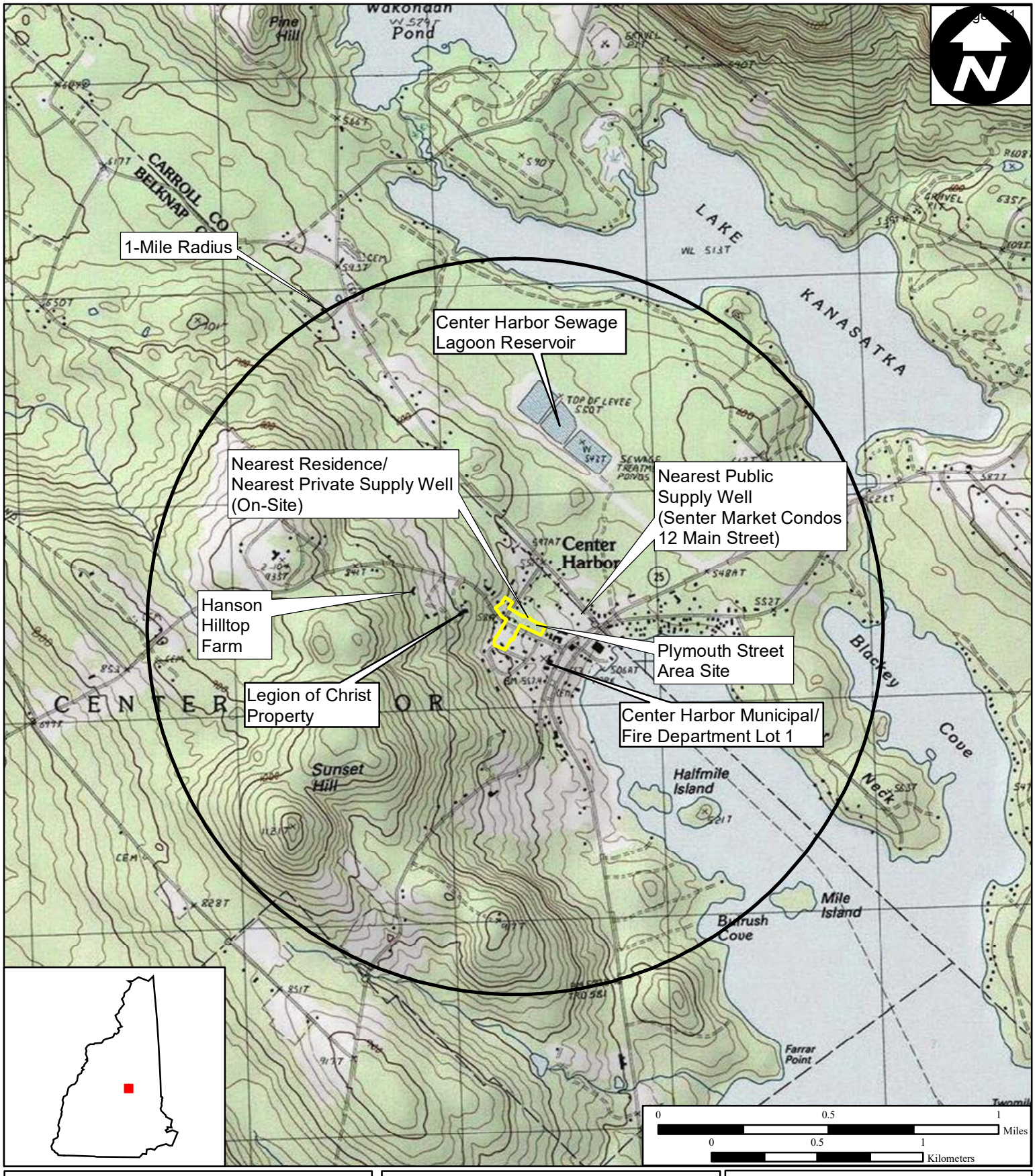

Figure 1

Site Location Map

Plymouth Street Area Site
Plymouth Street, Kelsea Avenue, Kelley Court
Center Harbor, New Hampshire

EPA Region I
Superfund Technical Assessment and Response Team (START) V
Contract No. 68HE0120D0001

AD Number:	TOFP-01-21-07-0007
Created by:	B. Mace
Created on:	18 October 2021
Modified by:	T. Evans
Modified on:	10 February 2023

Data Sources:
Topos: MicroPath/USGS/USA Topo Maps
Quadrangle Name(s):
All other data: START

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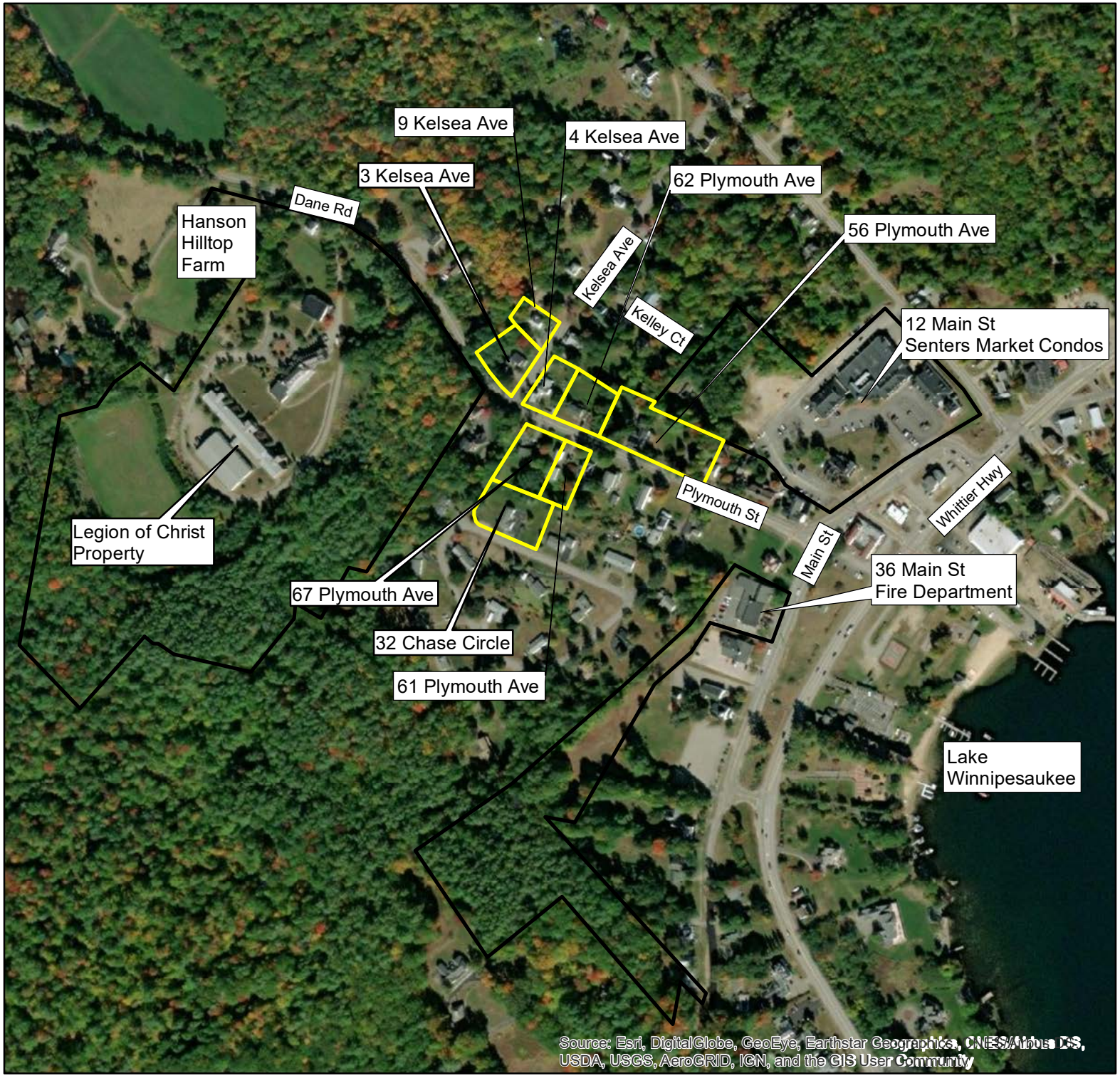

Figure 2

Site Diagram

Plymouth Street Area Site
Plymouth Street, Kelsea Avenue, Kelley Court
Center Harbor, New Hampshire

EPA Region I
Superfund Technical Assessment and Response Team (START) V
Contract No. 68HE0120D0001

AD Number:	TOFP-01-21-07-0007
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Modified by:	T. Evans
Modified on:	10 February 2023

LEGEND

- Other Parcels
- Site Parcels

N

0 250 500

Feet

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: USA TopoMaps
All other data: START

WESTON SOLUTIONS

E:\NH_gis\21070007_Plymouth Street Area Site\MXDs\0103_Plymouth Area_Figure 2.1.mxd

Figure 3

Project Study Area

Plymouth Street Area Site
Plymouth Street, Kelsea Avenue, Kelley Court
Center Harbor, New Hampshire

EPA Region I
Superfund Technical Assessment and Response Team (START) V
Contract No. 68HE0120D0001

AD Number:	TOFP-01-21-07-0007
Created by:	B. Mace
Created on:	18 October 2021
Modified by:	T. Evans
Modified on:	15 February 2023

LEGEND

NHDES Sampling Area

N

0 250 500

Feet

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: USA TopoMaps
All other data: START

WESTON SOLUTIONS

E:\NH_gis\21070007_Plymouth Street Area Site\MXDs\0103_Plymouth Area_Figure 3.mxd

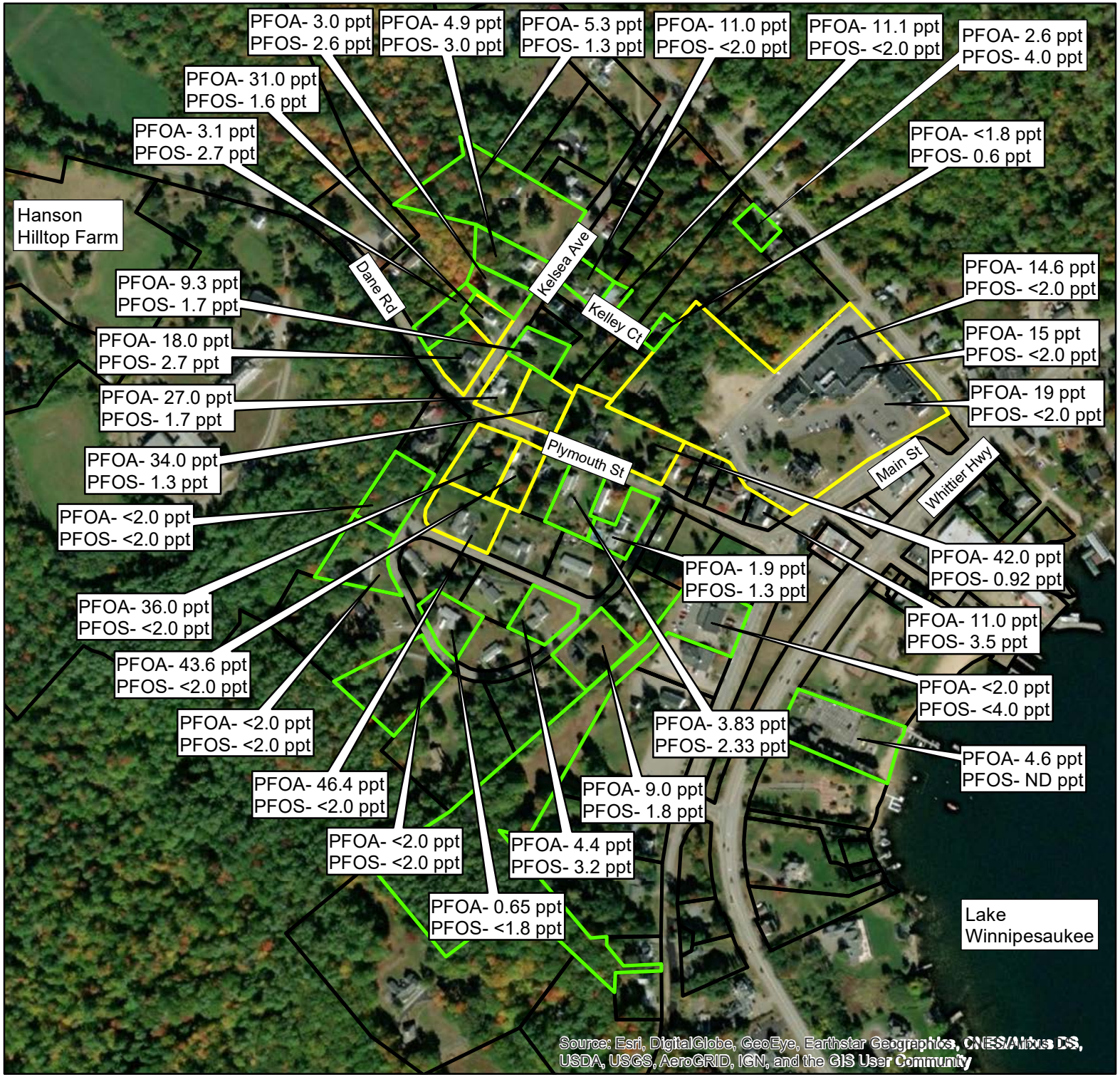

Figure 4

NH DES PFAS Analytical Results for Groundwater Wells
Center Harbor NH

Plymouth Street Area Site
Plymouth Street, Kelsea Avenue, Kelley Court
Center Harbor, New Hampshire

EPA Region I
Superfund Technical Assessment and Response Team (START) V
Contract No. 68HE0120D0001

AD Number:	TOFP-01-21-07-0007
Created by:	B. Mace
Created on:	18 October 2021
Modified by:	T. Evans
Modified on:	15 February 2023

LEGEND

- PFAS Below State Standards
- PFAS Above State Standards
- No Known PFAS Sampling Conducted

PFAS- Per- and polyfluoroalkyl Substances
PFOA- Perfluorooctanoic Acid
PFOS- Perfluorooctanesulfonic Acid
PPT- Parts Per Trillion
ND-Not Detected

N

0 250 500

Feet

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: USA TopoMaps
All other data: START

WESTON SOLUTIONS

E:\NH_gis\21070007_Plymouth Street Area Site\MXDs\0103_Plymouth Area_Figure 4.mxd

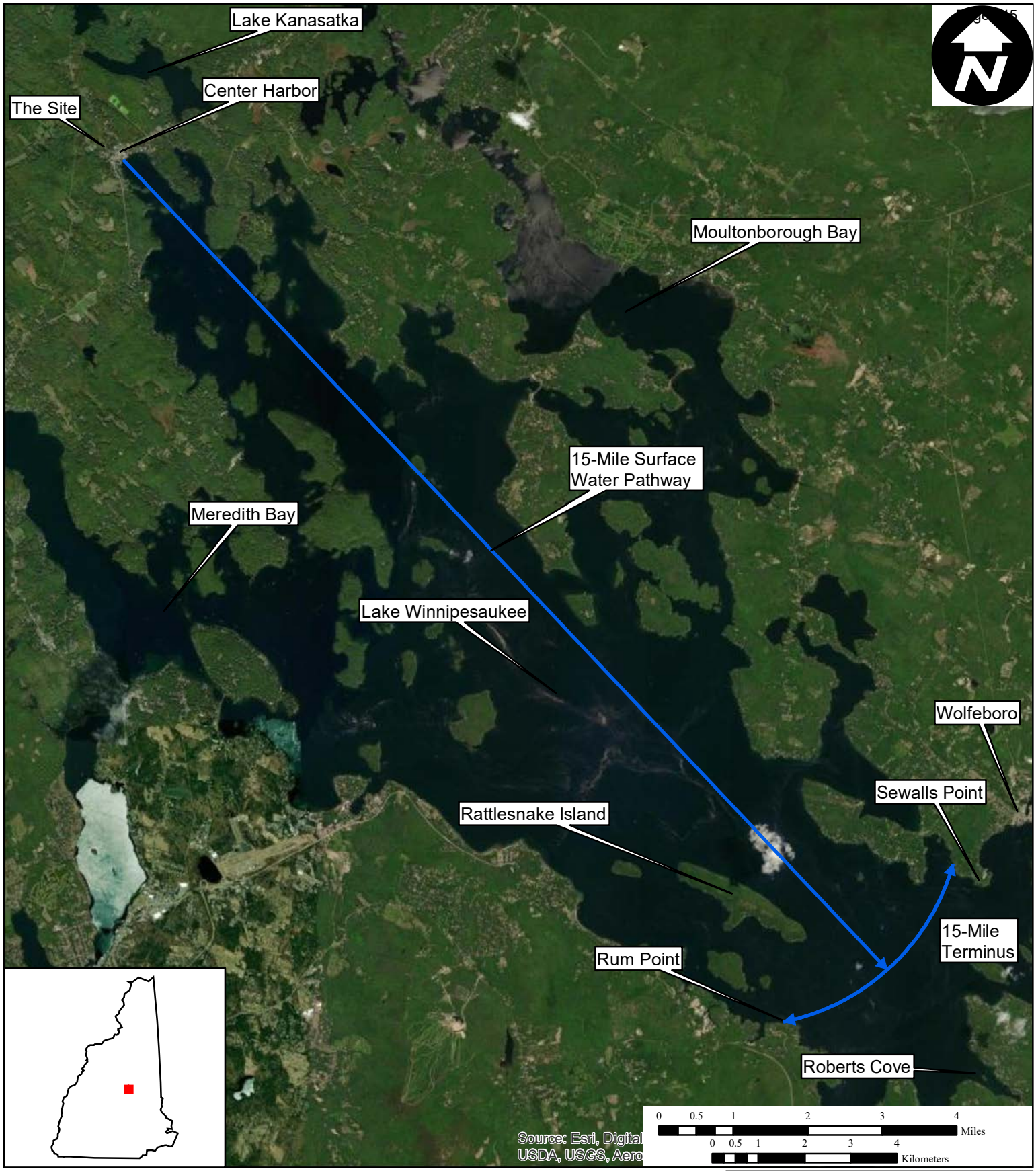

Figure 5

Surface Water Pathway

Plymouth Street Area Site
Plymouth St, Kelsea Ave, Kelley Ct
Center Harbor, New Hampshire

EPA Region I
Superfund Technical Assessment and Response Team (START) V
Contract No. 68HE0120D0001

AD Number:	TOFP-01-21-07-0007
Created by:	Tyler Evans
Created on:	10 February 2023
Modified by:	Tyler Evans
Modified on:	15 February 2023

Data Sources:
Topos: MicroPath/USGS/USA Topo Maps
Quadrangle Name(s): Center Harbor
All other data: START

WESTON SOLUTIONS

E:\NH_gis\21070007_Plymouth Street Area Site\MXDs\0103_Plymouth Area_Figure 5.mxd

ATTACHMENT B

PLYMOUTH STREET AREA SITE
PHOTODOCUMENTATION LOG

PHOTODOCUMENTATION LOG
Plymouth Street Area Site ● Center Harbor, New Hampshire

SCENE: View of Phos-Check 5-gallon container stored at Center Harbor Fire Station.

DATE: 22 September 2021 **TIME:** 1125 hours
PHOTOGRAPHER: J. Kelly **CAMERA:** Apple iPhone 8

SCENE: View of Silv-ex 5-gallon container stored at Center Harbor Fire Station.

DATE: 22 September 2021 **TIME:** 1125 hours
PHOTOGRAPHER: J. Kelly **CAMERA:** Apple iPhone 8

PHOTODOCUMENTATION LOG
Plymouth Street Area Site ● Center Harbor, New Hampshire

SCENE: View of ABC Dry Chemical Fire Extinguisher Recharge located at the Fire Department.

DATE: 22 September 2021 **TIME:** 1125 hours
PHOTOGRAPHER: J. Kelly **CAMERA:** Apple iPhone 8

SCENE: View of Center Harbor Engine 1, containing a 30-gallon foam tank. Photograph taken facing southeast.

DATE: 22 September 2021 **TIME:** 1130 hours
PHOTOGRAPHER: J. Kelly **CAMERA:** Apple iPhone 8

PHOTODOCUMENTATION LOG
Plymouth Street Area Site ● Center Harbor, New Hampshire

SCENE: View of the public water system (PWS) at 12 Main St Property (Senters Market Condo Association Well). Photograph taken facing northwest.
DATE: 22 September 2021 **TIME:** 1142 hours
PHOTOGRAPHER: J. Kelly **CAMERA:** Apple iPhone 8

SCENE: View of the PWS at 12 Main St Property (Senters Market Condo Association Well). Photograph taken facing southeast.
DATE: 22 September 2021 **TIME:** 1143 hours
PHOTOGRAPHER: J. Kelly **CAMERA:** Apple iPhone 8

PHOTODOCUMENTATION LOG
Plymouth Street Area Site ● Center Harbor, New Hampshire

SCENE: View of Hanson Hilltop Farm with Biosolids used as fertilizer, along Dane Road northwest of the Site. Photograph taken facing northwest.
DATE: 22 September 2021 **TIME:** 1218 hours
PHOTOGRAPHER: J. Kelly **CAMERA:** Apple iPhone 8

SCENE: View of the Legion of Christ Building west-northwest of the Site. Photograph taken facing south-southeast.

DATE: 22 September 2021 **TIME:** 1222 hours
PHOTOGRAPHER: J. Kelly **CAMERA:** Apple iPhone 13

PHOTODOCUMENTATION LOG
Plymouth Street Area Site ● Center Harbor, New Hampshire

TOP

SCENE: View 67 Plymouth Street. Photograph taken facing southwest.

SCENE: View of 53 Plymouth Street. Photograph taken facing southwest.

PHOTODOCUMENTATION LOG
Plymouth Street Area Site ● Center Harbor, New Hampshire

SCENE: View of 56 Plymouth Street. Photograph taken facing northeast.

SCENE: View of 53 Plymouth Street. Photograph taken facing west.

PHOTODOCUMENTATION LOG
Plymouth Street Area Site ● Center Harbor, New Hampshire

SCENE: View of 56 Plymouth Street. Photograph taken facing southeast.

SCENE: View of 61 Plymouth Street. Photograph taken facing south.

PHOTODOCUMENTATION LOG
Plymouth Street Area Site ● Center Harbor, New Hampshire

SCENE: View of 67 Plymouth Street. Photograph taken facing east.

SCENE: View of 62 Plymouth Street. Photograph taken facing east-southeast.

PHOTODOCUMENTATION LOG
Plymouth Street Area Site ● Center Harbor, New Hampshire

SCENE: View of 75 Dane Road. Photograph taken facing southwest.

ATTACHMENT C

PLYMOUTH STREET AREA SITE
HISTORICAL SAMPLE RESULTS

Table 1 **NHDES PFAS Analytical Results for Private/Public Well Samples**
Center Harbor, New Hampshire (2019-2021)

NHDES PFAS Analytical Results for Private/Public Well Samples
Center Harbor, New Hampshire
(2019-2021)

		MCL/AGQS	12	15	11	18	---	---	---	---	---
Address	Tax Lot Number	Sample Date	PFOA	PFOS	PFNA	PFHxS	PFBA	PFPeA	PFBS	PFHxA	PFHpA
Center Harbor Inn (294 Whittier Hwy) PWS	102-072-000	12/7/2016	4.6	ND	ND	ND	NA	NA	NA	NA	NA
36 Main Street (Fire Station)	102-001-000	5/9/2019	<2	<4	<2	<3	NA	NA	NA	NA	<2
Senters Market Condo (Route 25B) PWS NH0396020	102-060-000	1/4/2021	**14.6**	<2	<2	<2	NA	NA	NA	NA	NA
56 Plymouth Street	102-055-000	3/4/2021	**42**	0.92	1.6	<1.9	8.1	15	4.6	20	36
62 Plymouth Street	102-054-000	3/4/2021	**34**	1.3	0.9	0.54	7.7	14	4.5	18	30
35 Bean Rd	102-039-000	3/4/2021	2.6	4	<1.8	0.64	<4.5	0.59	1.2	0.64	1.1
10 Kelsea Ave	102-052-000	3/4/2021	9.3	1.7	<1.9	0.79	2.8	2.9	2.8	4.4	7.9
20 Kelsea Ave	102-046-000	3/4/2021	11	1.7	<1.9	0.6	3.6	4.8	4.3	6.7	10
61 Plymouth Street	102-025-000	3/24/2021	**43.6**	<2	<2	<2	6.75	13.3	4.28	21.3	38
9 Kelley Court	102-047-000	3/24/2021	11.1	<2	<2	<2	3.17	4.17	3.05	6.45	11.6
Senters Market Condo (Route 25B) PWS NH0396020	102-060-000	4/22/2021	**15**	<2	<2	<2	NA	NA	NA	NA	NA
53 Chase Circle	102-011-000	5/11/2021	0.65	<1.8	<1.8	<1.8	4.5	<1.8	0.63	<1.8	<1.8
71 Chase Circle	102-013-000	5/11/2021	4.4	3.2	<1.7	<1.7	1.8	1	0.86	1.8	1.6
19 Kelsea Ave	102-033-000	5/11/2021	4.9	3	<1.8	0.84	<4.5	1.5	4.7	2	2.7
21 Kelsea Ave	102-034-000	5/11/2021	5.3	1.3	<1.8	<1.8	<4.6	1.3	1.3	2.2	3
10 Chase Circle	102-021-000	5/12/2021	1.9	1.3	<1.8	<1.8	<4.5	0.61	0.67	1.1	1.1
72 Chase Circle	102-006-000	5/12/2021	9	1.8	<1.8	<1.8	4.2	4	3.7	8.1	4.5
4 Kelsea Ave	102-053-000	5/12/2021	**27**	1.7	1.2	0.58	5	8.9	3.1	13	22
9 Kelsea Ave	102-031-000	5/12/2021	**31**	1.6	1.1	0.5	6.3	11	3.7	15	27
13 Kelley Court	102-048-000	5/13/2021	<1.8	0.6	<1.8	<1.8	<4.5	<1.8	0.88	<1.8	<1.8
82 Dane Rd	102-029-000	5/13/2021	3.1	2.7	<1.7	0.64	<4.3	<1.7	3.5	<1.7	<1.7
3 Kelsea Ave	102-030-000	5/13/2021	**18**	2.7	0.83	<1.8	4.1	9.1	2.2	11	18
15 Kelsea Ave	102-032-000	5/13/2021	3	2.6	<1.7	0.86	<4.3	<1.7	4.3	<1.7	0.52
53 Plymouth Street	102-023-000	5/20/2021	3.83	2.33	<2	<2	<2	<2	<2	<2	<2
32 Chase Circle	102-018-000	5/20/2021	**46.4**	<2	<2	<2	8.69	17.2	5.57	24.7	42.9
34 Plymouth Street	102-059-000	5/25/2021	11	3.5	<1.7	0.79	2.7	3.2	8	4.3	6
67 Plymouth Street	102-026-000	7/2/2021	**36**	<2	<2	<2	5.89	11.3	3.88	17	27.7
Senters Market Condo (Route 25B) PWS NH0396020	102-060-000	7/7/2021	**19**	<2	<2	<2	NL	NL	NL	NL	NL
58 Chase Circle	102-009-000	8/1/2021	<2	<2	<2	<2	NL	NL	NL	NL	NL
44 Chase Circle	102-016-000	9/20/2021	<2	<2	<2	<2	NL	NL	NL	NL	NL
38 Chase Circle	102-017-000	9/28/2021	<2	<2	<2	<2	NL	NL	NL	NL	NL

NOTES:

All results in nanograms per Liter (ng/L)

< = Less than

NA = Not Analyzed

ND = Not Detected

NL = Not Listed

NH DES = New Hampshire Department of Environmental Services

PFAS = Per- and polyfluoroalkyl substances

MCL = Maximum Contaminant Level

AGQS = Ambient Groundwater Quality Standards

Values bolded and shaded in yellow indicate compounds exceeding NH DES MCLs and AGQS.

--- = No NH DES MCLs and AGQS exist.

PWS = Public Water Supply

PFOA = Perfluorooctanoic acid

PFOS = Perfluorooctanesulfonic acid

PFNA = Perfluorononanoic acid

PFHxS = Perfluorohexanesulfonic acid

PFBA = Perfluorobutanoic acid

PFPeA = Perfluoropentanoic acid

PFBS = Perfluorobutanesulfonic acid

PFHxA = Perfluorohexanoic acid

PFHpA = Perfluoroheptanoic acid

EPA Potential Hazardous Waste Site Preliminary Assessment Form

Identification

State:	CERCLIS Number:
NH	NHN000153333

CERCLIS Discovery Date: 6/14/2021

1. General Site Information

Name: Plymouth Street Area Site	Street Address: Plymouth Street, Kelsea Avenue, Kelley Court				
City: Center Harbor	State: NH	Zip Code: 03226-3342	County: Belknap	Co. Code: 001	Cong. Dist: 2nd
Latitude: 43 º 42 ' 35.4 " Longitude: -71 º 27 ' 52.5 "	Approximate Area of Site: 3.16 Acres _____ Square Ft		Status of Site: ☒ Active ☐ Not Specified ☐ Inactive ☐ NA (GW plume, etc.)		

2. Owner/Operator Information

Owner(s): Donald P & Mary Ann Keay (56 Plymouth St) Eamon Cahall (61 Plymouth St) Karen McLendon (62 Plymouth St) Nicholas Eric and Elena Gagliardi. (67 Plymouth St) Ronald E, & Deborah L. Ulm (3 Kelsea Ave) Jesse D & Jaime M Jenkins (4 Kelsea Ave) Mathew L Wallace and Riley E Lacasse (9 Kelsea Ave) Philip Boivin -TTees & Philip T Boivin Rev Trust (32 Chase Circle Whitmorr LLC (12 Main Street)	Operator: N/A
Street Address: 56 Plymouth St, 61 Plymouth St, 62 Plymouth St, 67 Plymouth St., 3 Kelsea Ave, 4 Kelsea Ave, 9 Kelsea Ave, 12 Main St.	Street Address: N/A
City: Center Harbor	City: Center Harbor
State: NH / Zip Code: 03044 / Telephone:	State: NH / Zip Code: 03044 / Telephone:

Type of Ownership:
- ☒ Private
- ☐ Federal Agency — Name _____
- ☐ State
- ☐ Indian
- ☐ County
- ☐ Municipal
- ☐ Not Specified
- ☐ Other _____

How Initially Identified:
- ☐ Citizen Complaint
- ☐ PA Petition
- ☒ State/Local Program
- ☐ RCRA/CERCLA Notification
- ☐ Federal Program
- ☐ Incidental
- ☐ Not Specified
- ☐ Other _____

3. Site Evaluator Information

Name of Evaluator: Bonnie J. Mace/J.F. Kelly	Agency/Organization: Weston Solutions, Inc., START V	Date Prepared: 10/20/2021 (revised 2/14/2023)
Street Address: 101 Billerica Avenue, Bldg 5, Suite 103	City: North Billerica	State: MA
Name of EPA or State Agency Contact: Mandy Liao, EPA Region I Site Assessment Manager	Street Address: 5 Post Office Square (OSRR07-2)	
City: Boston	State: MA	Telephone: 617-918-1036

4. *Site Disposition (for EPA use only)*

Emergency Response/Removal Assessment Recommendation: ☐ Yes ☒ No Date: _____	CERCLIS Recommendation: ☐ Higher Priority SI ☒ Lower Priority SI ☐ NFRAP ☐ RCRA ☐ Other _____ Date: _____	Signature: Mandy Liao Name (Typed): Mandy Liao Position: Site Assessment Manager

EPA **Potential Hazardous Waste Site**
Preliminary Assessment Form – Page 2 of 4

CERCLIS Number:
NHN000153333

5. *General Site Characteristics*

Predominant Land uses Within 1 Mile of Site (check all that apply):

- ☐ Industrial
- ☒ Commercial
- ☒ Residential
- ☒ Forest/Fields
- ☒ Agricultural
- ☐ Mining
- ☐ DOD
- ☐ DOE
- ☐ DOI
- ☐ Other Federal Facility _____
- ☐ Other _____

Site Setting:

- ☐ Urban
- ☒ Suburban
- ☐ Rural

Years of Operation:
Beginning Year 1950s (when PFAS was introduced)
Ending Year _____
☒ Unknown

Types of Site Operation (check all that apply)

- ☐ Manufacturing (must check subcategory)
  - ☐ Lumber and Wood Products
  - ☐ Inorganic Chemicals
  - ☐ Plastic and/or Rubber Products
  - ☐ Paints, Varnishes
  - ☐ Industrial Organic Chemicals
  - ☐ Agricultural Chemicals (e.g., pesticides, fertilizers)
  - ☐ Miscellaneous Chemical Products (e.g., adhesives, explosives, ink)
  - ☐ Primary Metals
  - ☐ Metal Coating, Plating, Engraving
  - ☐ Metal Forging, Stamping
  - ☐ Fabricated Structural Metal Products
  - ☐ Electronics Equipment
  - ☐ Other Manufacturing
- ☐ Mining
  - ☐ Metals
  - ☐ Coal
  - ☐ Oil and Gas
  - ☐ Non-metallic Minerals
- ☐ Retail
- ☐ Recycling
- ☐ Junk/Salvage Yard
- ☐ Municipal Landfill
- ☐ Other Landfill
- ☐ DOD
- ☐ DOE
- ☐ DOI
- ☐ Other Federal Facility _____
- ☐ RCRA
  - ☐ Treatment, Storage, or Disposal
  - ☐ Large Quantity Generator
  - ☐ Small Quantity Generator
  - ☐ Subtitle D
    - ☐ Municipal
    - ☐ Industrial
  - ☐ "Converter"
  - ☐ "Protective Filer"
  - ☐ "Non- or Late Filler"
- ☐ Non Specified
- ☒ Other Residential/Commercial

Waste Generated:

- ☐ Onsite
- ☐ Offsite
- ☒ Onsite and Offsite

Waste Disposition Authorized By:

- ☐ Present Owner
- ☐ Former Owner
- ☐ Present & Former Owner
- ☐ Unauthorized
- ☒ Unknown

Waste Accessible to the Public:

- ☐ Yes
- ☒ No

Distance to Nearest Dwelling, School, or Workplace:
0 (on site) Feet

6. *Waste Characteristics Information*

Source Type: (check all that apply)	Source Waste Quantity: (include units)	Tier*:
☐ Landfill		
☐ Surface Impoundment		
☐ Drums		
☐ Tanks and Non-Drum Containers		
☐ Chemical Waste Pile		
☐ Scrap Metal Junk Pile		
☐ Tailings Pile		
☐ Trash Pile (open dump)		
☐ Land Treatment		
☒ Contaminated Ground Water Plume (unidentified source)	>0	A
☐ Contaminated Surface Water/Sediment (unidentified source)		
☐ Contaminated Soil		
☐ Other _____		
☐ No Sources		

* C = Constituent, W = Wastestream, V = Volume, A = Area

General Types of Waste (check all that apply)

- ☐ Metals
- ☐ Organics
- ☐ Inorganics
- ☐ Solvents
- ☐ Paints/Pigments
- ☐ Laboratory/Hospital Waste
- ☐ Radioactive Waste
- ☐ Construction/ Demolition Waste
- ☐ Pesticides/Herbicides
- ☐ Acids/ Bases
- ☒ Oily Waste
- ☐ Municipal Waste
- ☐ Mining Waste
- ☐ Explosives
- ☒ Other PFAS

Physical State of Waste as Deposited (check all that apply):

- ☒ Solid
- ☒ Sludge
- ☐ Powder
- ☒ Liquid
- ☐ Gas