

## Private Well Sampling and Treatment Summary Report

NORTH MONMOUTH PFAS SITE  
North Monmouth, ME

Prepared for Tex Tech Industries, Inc.  
File No. 5197.01  
February 15, 2023

# TABLE OF CONTENTS

|       |  |    |
|-------|--|----|
| 1.0   | INTRODUCTION.....  | 1  |
| 2.0   | WORK PERFORMED .....   | 1  |
| 2.1   | Initial Residential Well Sampling .....                              | 1  |
| 2.2   | POET Systems.....  | 2  |
| 2.2.1 | POET Installation.....   | 2  |
| 2.2.2 | POET Sampling Activities and Methodology .....                       | 3  |
| 3.0   | RESULTS .....  | 4  |
| 3.1   | Residential Well Analytical Results.....                             | 4  |
| 3.2   | POET System Efficacy Results .....                                   | 4  |
| 3.3   | Interim Reporting/Measures .....                                     | 6  |
| 4.0   | POET SYSTEM O&M .....  | 7  |
| 4.1   | POET System O&M Summary .....  | 7  |
| 4.1.1 | Sampling Frequency.....  | 7  |
| 4.1.2 | POET System O&M Reporting.....                                       | 7  |
| 4.1.3 | Determination of Next Steps Based on Results/Carbon Change Out ..... | 8  |
| 5.0   | PFAS DELINEATION ABOVE MAINE INTERIM STANDARD.....                   | 8  |
| 6.0   | CONCLUSIONS/RECOMMENDATIONS .....                                    | 10 |

## TABLES

|         |  |
|---------|--|
| Table 1 | Residential Property Summary                   |
| Table 2 | Summary of Residential Well Analytical Results |
| Table 3 | Summary of POET Analytical Results             |

## FIGURES

|          |  |
|----------|--|
| Figure 1 | Locus Plan                                     |
| Figure 2 | PFAS Results and Additional Sampling Locations |
| Figure 3 | PFAS Delineation Above Maine Interim Standard  |

## APPENDICES

|              |   |
|--------------|---|
| Appendix A   | Limitations   |
| Appendix B-1 | Residential Well Sampling Laboratory Analytical Reports |
| Appendix B-2 | POET Efficacy Sampling Laboratory Analytical Reports    |
| Appendix C   | Proposed POET O&M Plan                                  |





## 1.0 INTRODUCTION

On behalf of Tex Tech Industries, Inc (TTI), Sanborn Head and Associates, Inc. (Sanborn Head) has prepared the following sampling summary of results for residential water supply wells and point of entry treatment (POET) systems sampled for per- and poly fluorinated alkyl substances (PFAS) at the North Monmouth PFAS site (Site) in North Monmouth, Maine.

By way of background, as part of a Maine Department of Environmental Protection's (MEDEP) state-wide effort to investigate PFAS contamination, in 2021 MEDEP requested that TTI voluntarily include various PFAS compounds as analytes in an ongoing groundwater monitoring program related to historic VOC contamination that had occurred under the prior ownership of the TTI facility. Thereafter, in coordination with MEDEP, TTI voluntarily commissioned a sampling program of its water supply well along with various other wells in the North Monmouth vicinity to assess groundwater quality of drinking water supply wells.

To date, a total of fifty-four (54) drinking water wells at properties in the vicinity of North Main Street, have been voluntarily sampled by TTI. Specific locations include residential properties located along Old Lewiston Road to the East; North Main Street from East to West; New Street to the North; and Highland Terrace to the South. A total of 26 POET systems were installed at properties where sampling results indicated PFAS detections above the Maine Interim Standard for PFAS of 20 nanograms per liter (ng/L),<sup>1</sup> with follow-up system efficacy sampling completed at each location.<sup>2</sup> A site location map is included as **Figure 1**. A list of residential property information that includes sampling status, well information, initial bottled water status, POET installation status, and POET sampling status are included in **Table 1**. To note, all sampling results prior to June 2022 are based upon samples collected by Wood Environment & Infrastructure Solutions, Inc. (Wood). This report is subject to the limitations provided in **Appendix A**.

## 2.0 WORK PERFORMED

Section 2 of this report describes the sampling activities TTI has voluntarily performed through February 15, 2023.

### 2.1 Initial Residential Well Sampling

This sampling effort included initial sampling of drinking water wells to evaluate for the presence of PFAS and to determine the area that might warrant further action. The primary objective of this effort was to identify residences for the provision of temporary bottled water service and subsequent installation of a POET system, based on the detection of PFAS compounds in the residence's drinking water well at concentrations at or above the Maine Interim Standard. A secondary objective of the initial sampling efforts was the delineation of potential PFAS impacts to groundwater to identify and evaluate potential source(s) of the contamination.

---

<sup>1</sup> The Maine Interim Standard of 20 ng/L (ppt) applies to the sum of six individual PFAS compounds including PFOA, PFOS, PFHpA, PFNA, PFDA, and PFHxS.

<sup>2</sup> One planned POET system could not be installed at property 40-29 due to a compromised and discontinued water line at the property. As a result of the compromised water line, well water is not currently in use at this residence.



Residential homes that were sampled through these efforts contain a private drinking water source via an overburden (dug) or bedrock (drilled) well and corresponding well pumping system. Many of the residential pumping systems contain an expansion pressure tank, sediment filtration system, or a combination in which water passes prior to supplying the residence. Several homes also utilize a preexisting reverse osmosis (RO) system which provides treatment of the well water prior to use. For the sampling activities, a Sanborn Head representative previewed existing water systems and identified a spigot or sampling location prior to any existing treatment systems to ensure the sampling of raw water from the well. An outdoor spigot for the residential wells was purged for a minimum of ten (10) minutes prior to sample collection to enhance flow through the system before sampling. Parameters were measured periodically during the purge, including temperature, specific conductance, and pH. Samples were collected following the 10-minute purge and were placed on ice and shipped to Eurofins Lancaster Laboratories (Eurofins) for analysis. Eurofins is a NELAP-certified analytical laboratory and certified in Maine to conduct analysis for PFAS. Samples were analyzed for Perfluorooctanoic Acid (PFOA), Perfluorooctanesulfonic Acid (PFOS), Perfluoroheptanoic Acid (PFHpA), Perfluorononanoic Acid (PFNA), Perfluorodecanoic Acid (PFDA), and Perfluorohexanesulfonic Acid (PFHxS) using U.S. Environmental Protection Agency (USEPA) Method 537.1 (isotope dilution).

Several properties that were contacted for initial sampling did not respond and these properties are identified on **Figure 2**. Follow up contact included a second letter request to sample and a visit to the residence to request sampling access. Based on the lack of response, these properties were not included in the sampling program and further communication is not planned at this time.

## 2.2 POET Systems

### 2.2.1 POET Installation

Analytical results of the residential well sampling were compared to the Maine Interim Standard for PFAS in drinking water of 20 ng/L (equivalent to parts per trillion) for the combined sum of six different PFAS compounds: PFOA, PFOS, PFHpA, PFNA, PFDA, and PFHxS. Property owners for those residential well systems identified to exceed the Maine Interim Standard were promptly contacted and were offered bottled water as an interim measure voluntarily by TTI with agreement from MEDEP. These residences were also offered the option of having a POET system installed at no expense to the property owner, and those who accepted the system were scheduled for an installation date. TTI contracted a local subcontractor, Water Treatment Equipment, Inc. (WEI), to perform POET treatment system installations. WEI was recommended to TTI by the MEDEP based on the Agency's prior experience working with the contractor to install POET systems in residences elsewhere in Maine to remove PFAS from contaminated drinking water sources.

To date, a total of twenty-six (26) POET systems have been installed in residences in the vicinity of North Monmouth. POET systems were attached to the end of any existing water filtration system of the home, where it then connects back to the water feed line. The POET systems



consist of two, 2.5-cubic foot granular activated carbon (GAC) filter canisters, and three sampling ports to allow for sample collection. This allows for consistent sampling of each installed system to monitor that the system is operating properly. System installation also included a totalizer flow meter to record the cumulative volume of water passing through each system. Systems were installed during several events between July 29 and November 3, 2022. System installation events were selected based on availability of treatment system components, scheduling availability of homeowners, and timing of receipt of sample results (i.e., as new residences were sampled and residential wells were identified with PFAS concentrations above the Maine Interim Standard, these residences were scheduled for POET installations.) The POET systems installed at each location were the same system shown in a schematic previously provided to and approved by MEDEP, as seen in Section 2.2 of **Appendix C**.

Property 52-58 (shared drinking water well with 52-59) was contacted for POET installation but did not respond. In addition, property 52-63 did not respond to requests for sampling the POET system installed at this residence, including multiple phone calls. Based on a subsequent in-person visit to the residence, it appeared as though it may have been abandoned. Based on the lack of response on the part of homeowners to TTI's repeated attempts to contact them, these properties were not included in the sampling program and further communication is not planned at this time. One planned POET system at Property 40-29 was not installed due to a compromised and discontinued water line at the property. As a result of the compromised water line from a shared private well with Property 40-28, well water is currently not in use at this residence. Finally, Property 52-76 was not able to be sampled during earlier events after TTI was unable to garner consent from the property owner ahead of time due in large part to the fact that the current tenant had not conveyed the request to the property owner. TTI was later successful in obtaining landowner permission and sampling was completed in January 2023. TTI recently received the results from the sample collected at Property 52-76 indicating PFAS concentrations were above the Maine Interim Standard, and the property owner was contacted to coordinate installation of a POET system at the residence. Maine DEP will be notified once the system installation has been completed at Property 52-76.

### **2.2.2 POET Sampling Activities and Methodology**

As recommended by MEDEP, each POET system was sampled approximately six weeks following installation to demonstrate its efficacy. The POET system sampling included three sample ports consisting of a pre-, mid-, and post-location designed to test for PFAS compounds in raw water from the well (pre-treatment), treated water following the first carbon canister (mid-treatment), and treated water entering the home for use (post-treatment). During sampling of each system, totalizer flow meter readings were recorded to document the cumulative amount of water use through the system since installation. As recommended by MEDEP, prior to sampling, each location was purged for 30 minutes through an outside spigot. Purging resulted in the removal of between 50 and 250 gallons of water, depending primarily on the yield of the well. Field screening parameters were measured periodically during the purge, including temperature, specific conductance, and pH. Following 30 minutes of purge time, plus an additional five-minute purge at each sample port, samples were collected and



placed on ice for shipment to Eurofins for analysis of the six PFAS described above. Samples were analyzed for PFAS using USEPA Method 537.1 (isotope dilution)<sup>3</sup>.

Initial performance samples collected at three properties (46-63, 52-3, and 52-77) provided anomalous results as described below in Section 3. For these locations, confirmatory samples were collected to assess system performance. At the request of MEDEP, confirmatory sampling at location 46-63 also included collection of a sample from the kitchen sink. Samples were collected using the same protocol as described in this Section above.

### 3.0 RESULTS

Section 3.0 details the results gathered from the sampling events described in this report. Analytical data reports are included in **Appendix B-1** (Residential Well results) and **Appendix B-2** (POET Efficacy results).

#### 3.1 Residential Well Analytical Results

Below is a breakdown of PFAS sample results from initial residential well sampling quantifying those at which PFAS detections were shown to be at or above the MEDEP Interim Standard, versus those which were demonstrated to be below the Maine Interim Standard. The properties that fall into one of the above-mentioned criteria are presented in **Figure 2**.

| Result Criteria              | No. of Properties |
|------------------------------|-------------------|
| Above MEDEP Interim Standard | 27                |
| Below MEDEP Interim Standard | 25                |

For wells with PFAS detections at or above the Maine Interim Standard, the total PFAS ranged from 21.8 ng/L (52-59) to 181.49 ng/L (52-74), with a median result of 35.95 ng/L. Across the residential wells with detections for PFAS compounds, PFOA was detected in all instances except for six wells (40-18, 40-27, 40-32, 40-40, 52-9, and 52-23). PFOS was detected in all instances except for twelve wells (40-18, 40-27, 40-32, 40-40, 46-97, 52-5, 52-9, 52-16, 52-23, 52-53-1, 52-54, and 52-73)<sup>4</sup>. Total PFAS concentrations for wells below the Maine Interim Standard ranged from non-detect (six locations total) to 19.8 ng/L. Residential analytical results are summarized in **Table 2** of this report.

#### 3.2 POET System Efficacy Results

Analytical results for sampling of residential wells with POET systems installed were compared to the MEDEP Interim Standard for PFAS in drinking water. As noted above, sampling was

<sup>3</sup> Due to initial post-treatment analytical results from the first group of POET systems installed indicating potential quality control concerns with respect to PFOS, Alpha Analytical Laboratories, also a Maine-certified laboratory currently providing PFAS analytical services under contract with the MEDEP, was used for the second round of post-treatment sample analysis. However, analytical results indicated similar quality control concerns and anomalous results for PFOS. Therefore, the decision was made to complete subsequent analysis by Eurofins.

<sup>4</sup> Please note that the information presented does not include the two former water supply wells that were sampled (52-14 overburden well and 46-63A) which are no longer used for drinking water.



conducted in three locations: pre- (raw well water prior to treatment), mid- (water collected after the first treatment cannister), and post- (water collected after the second and final treatment cannister). Below is a breakdown of properties sampled from the pre-, mid-, and post-treatment sampling locations which are above the Maine Interim Standard, above detection limits but below Maine Interim Standard, and non-detect.

| Result Criteria              | No. of Properties Pre-Point | No. of Properties Mid-Point | No. of Properties Post Point |
|------------------------------|-----------------------------|-----------------------------|------------------------------|
| Above MEDEP Interim Standard | 24                          | 2                           | 0                            |
| Below MEDEP Interim Standard | 1                           | 16                          | 5                            |
| Non-Detect                   | 0                           | 7                           | 20                           |

To date, 25 residential wells with POET Systems of the 26 total installed have been sampled to confirm system efficacy. Of the 25 systems with analytical results, 23 indicated concentrations of total PFAS below the Maine Interim Standard for the combined sum of the six different PFAS compounds post treatment, of which 20 were non-detect, while the remaining five varied between 0.95 ng/L to 5.96 ng/L.

Two POET system post-treatment sample results from initial efficacy sampling indicated PFAS levels above the Maine Interim Standard at 21.0 and 42.8 ng/L. These POET systems (52-3 and 52-77) were promptly and voluntarily re-sampled in January 2023, as described further below. The POET system installed for 46-63 was also resampled in January 2023 at the request of MEDEP, including an additional sample from the residence’s kitchen sink<sup>5</sup>.

As previously discussed with the MEDEP during prompt submittal of residential well and POET system sample results to property owners and MEDEP (described below in Section 3.3), exceedances of the Maine Interim Standard in mid- and post-treatment samples described above were solely the result of PFOS detections. In fact, there was only one well (52-77) where detections of *any* PFAS compounds other than PFOS were observed in mid- and post-treatment samples.<sup>6</sup> In most cases, detections of PFOS in mid or post-treatment samples were not internally consistent. For example, detected PFOS concentrations in post-treatment samples were commonly higher in concentration than the raw well sample, the mid sample, or both locations. In addition, some of the PFOS detections in mid and post-treatment samples were identified by the laboratory with a quality control qualifier. Based on discussions with the laboratory, the qualifier (noted as “I” or “F” in Table 3 for results where this qualifier was reported) is due to matrix interference and results in a “maximum possible estimated concentration” reported by the laboratory. Finally, the only Maine Interim Standard exceedances (Property 52-3 and 52-77) in the post-treatment samples were from properties with very low well use following installation of the POET system (on the order of 20% of median

<sup>5</sup> The sample from property 46-63 kitchen sink was the only sample collected of this kind and was expressly requested for sampling by MEDEP as follow up confirmatory sampling due to anomalous PFOS results in mid- and post-treatment samples.

<sup>6</sup> PFHpA and PFOA were detected in the post-treatment sample of 52-77, however the combined sum of both compounds was less than half of the Maine Interim Standard of 20 ppt (9.8 ppt).



well use and less than 1,200 gallons in approximately six weeks of use). Confirmatory sampling of POET systems from Property 52-3 and 52-77 in January 2023 indicate that PFAS were non-detect in the mid- and post-treatment samples.

Based on the information above, the PFOS results in the mid and post-treatment samples likely are related to laboratory quality control issues and/or remnant PFAS compounds from materials used in the POET installation process (i.e., plumber's tape, components, and/or cement) of which there are not suitable replacement products at this time. The internal inconsistency, the fact that only PFOS was detected primarily (whereas PFOA typically was detected at higher concentrations in the raw water and PFOS has a higher affinity for adsorption), higher concentrations in wells with lower total flow, and the laboratory qualifiers for several of the locations with anomalous results, strongly suggests these data are not indicative of the POET systems functioning improperly. Rather, confirmatory data from January 2023 for Property 52-3 and 52-77 showing non-detect for mid- and post-treatment samples and the data from the remaining 23 systems demonstrate that POET systems are functioning as intended and are providing drinking water at concentrations below Maine Interim Standards. POET system efficacy results are presented in **Table 3**.

### 3.3 Interim Reporting/Measures

After receipt of analytical data from the laboratory, TTI, with assistance from Wood or Sanborn Head, voluntarily provided timely residential notification letters to homeowners detailing results as compared to the Maine Interim Standard, as well as potential next steps in the investigation. Representatives at MEDEP were notified of results, copied on respective residential correspondences, and provided electronic data deliverables (EDDs) of the analytical results to be uploaded to the MEDEP sampling data database. In consultation with MEDEP, for residential wells that tested above the MEDEP Interim Standard, TTI voluntarily implemented the interim provision of bottled drinking water service to residents during the ongoing investigations. Interim provision of bottled water was paid for by TTI. A total of thirty-two (32) homes were offered the provision of bottled water, as identified on **Table 1**, and presented on **Figure 2**. Additionally, TTI extended the offer to provide bottled drinking water service to three properties (52-5, 52-14, and 52-73) whose drinking water wells were shown through sampling to have PFAS concentrations below the Maine Interim Standard. These properties were offered bottled water due to their location near an adjacent property with a well that tested at or above the Maine Interim Standard. Two of the properties (52-14 and 52-73) did not accept the offer, and bottled water delivery was later discontinued for property 52-5 once results confirmed their well was below Maine Interim Standards. Given confirmatory sampling results below the Maine Interim Standard, POET systems were not installed at these three properties.

Two properties (40-29 and 52-4) were offered bottled water on account of the fact that each shared a well whose sampling results indicated PFAS concentrations at or above the Maine Interim Standard. Property 52-4 has since received a POET system and bottled water service was discontinued. As referenced previously, Property 40-29 was determined to have a compromised and discontinued waterline, thus a POET system was not installed at this property. In addition, during initial testing, property 52-76 was offered bottled water but was





not sampled. The residential well at this property has now been sampled and results are pending. Finally, property 52-75 was extended a bottled water service offer during initial sampling but based on review of further information, this property appears to be undeveloped and does not contain a drinking water well that services this property.

As POET systems were installed, a sampling schedule was initiated to confirm the efficacy of POET system performance. Following the receipt of POET performance analytical data (as described in Section 3.2), TTI sent notification letters to homeowners detailing results compared to the Maine Interim Standard and to notify homeowners that their POET systems were operating as intended. Following consultation with and agreement from MEDEP, notification letters also included information that the provision of bottled water would cease at the end of the current month when the communication was sent, and normal water use could resume. As noted above, in the two instances where initial system sampling results indicated the presence of PFOS in post samples, bottled water delivery was continued until the confirmatory sample results were received and verified system performance.

#### **4.0 POET SYSTEM O&M**

Section 4.0 provides a summary of the operational and maintenance plan (included as **Appendix C**) that will be implemented for installed residential POET systems going forward.

##### **4.1 POET System O&M Summary**

The following presents planned operation and maintenance (O&M) activities including the sampling frequency and protocols for POET system monitoring for the initial two years of the program. Based on the results of the initial two-year maintenance and monitoring program, parameters may be modified accordingly for future monitoring and maintenance of system operation. As is typical with systems of this nature, Sanborn Head anticipates that monitoring and maintenance frequency will be able to be reduced over time.

###### **4.1.1 Sampling Frequency**

Residential POET sampling is anticipated to be completed on a semi-annual basis in the months of March and September during the next two years (2023 and 2024). TTI will continue to contact residential homeowners to schedule sampling appointments based on availability. Sampling methodology for O&M activities will be performed in the same manner as described in Section 2.2.2 but will only include samples from the mid and post sample locations at each POET system. Samples will be analyzed for PFOA, PFOS, PFHpA, PFNA, PFDA, and PFHxS in accordance with USEPA Method 537.1 (isotope dilution) by a Maine certified laboratory. Detailed sampling procedures are described in Appendix C.

###### **4.1.2 POET System O&M Reporting**

Following receipt of analytical data from POET sampling, notification letters will be provided to residents with copies to the MEDEP within 15 business days. In addition, an annual report summarizing O&M activities, system monitoring analytical results, and recommendations for changes to the O&M Plan will be submitted to MEDEP in December of each year. For further details please refer to Section 4.0 of Appendix C.



#### **4.1.3 Determination of Next Steps Based on Results/Carbon Change Out**

After review of the analytical results from the previous sampling round and flow readings collected during sampling, TTI will determine if any breakthrough is occurring through the POET system (as defined in Section 3.1 of **Appendix C**, but generally based on detections of PFOA, PFOS, PFHpA, PFNA, PFDA, and/or PFHxS above Maine Interim Standards) and if carbon changeout is necessary. TTI will contact an authorized contractor to perform carbon change out or other maintenance activities as they may arise. During the initial two years of O&M, it is anticipated that at least one annual visit will occur to verify the components/functionality of the POET system and to replace spent carbon (outside of sample collection). The frequency of O&M site visits will be evaluated following the initial two years of monitoring. The first round of visits will be completed in March 2023, approximately one year following initial POET installations. If data indicate carbon replacement is needed at this time, carbon changeout will occur during the one-year visit. Carbon replacement will include removing the first carbon cannister, moving the second carbon vessel to the first position, and installing a new carbon vessel in the second position. The contractor will dispose of the spent carbon off-site in accordance with applicable state and federal regulations, which may or may not include sending the spent carbon to an appropriate facility for re-generation and re-use.

If breakthrough is determined (as defined in Appendix C) ahead of the annual visit, carbon vessel changeout will occur in the same vessel alignment sequence. Follow-up POET efficacy sampling will be completed during the next regularly scheduled monitoring event following carbon changeout, if and when carbon changeout is required. Follow-up POET efficacy sampling will be performed in the same manner as described in Appendix C.

TTI will arrange for an approved water filtration company to coordinate carbon replacement visits with residential homeowners at least ten (10) business days in advance of scheduled activities. A description of maintenance activities will be provided to each homeowner within the residential result letters detailing previous sampling results and during follow-up contact to schedule the next appointment.

#### **5.0 PFAS DELINEATION ABOVE MAINE INTERIM STANDARD**

During the voluntary PFAS investigation, a series of boundary criteria were developed based on review of available data and information. These criteria provided guidance to help determine the extent of contamination and identify additional delineation sampling needed, and in what direction to investigate. These criteria are:

- Two or more private drinking water wells that have a total PFAS concentration of the six PFAS compounds that is 50% less than the Maine Interim Standard (20 parts per trillion) geographically beyond the nearest residential well exhibiting an exceedance of the Maine Interim Standard;
- Two or more private drinking water wells that have total PFAS concentrations that are less than the Maine Interim Standard beyond the nearest residential well exhibiting an





exceedance and there is a decreasing trend in PFAS concentrations spatially from the New and North Main Streets intersection.

- Three or more private drinking water wells are less than the Maine Interim Standard beyond the nearest exceedance of the Maine Interim Standard; and/or
- Residential drinking water wells at a distance of 650 feet or greater from the nearest residential well exhibiting an exceedance above the Maine Interim Standard where there is not developed property or residential drinking water wells present in the intervening area.

**Figure 3** of this report was developed to assist in the visualization of the extent of contamination. Residential properties sampled, or attempted to contact for sampling, are color-coded in the following manner:

- Properties below the Maine Interim Standard are shown in green shading;
- Properties above the Maine Interim Standard are shown with blue border and a yellow halo around the approximate well location;
- Properties with blue diagonal hashing have received a POET system;
- Properties that were unresponsive to sampling requests or unavailable for sampling are shown with a red border;
- Properties with grey shading are undeveloped; and
- Areas of properties with grey diagonal hashing indicate areas that appear forested/undeveloped and are unlikely to have a drinking water source.

Based on the results of the investigation, there are twenty-five (25) drinking water wells that are below the Maine Interim Standard. Of those twenty-five, seventeen (17) residential wells are at least half that of the Maine Interim Standard (i.e., below 10 ng/L) and six are non-detect for the PFAS compounds. There are 28 private drinking water wells where detected PFAS concentrations exceeded the Maine Interim Standard. Of these wells, 26 have POETs installed and their performance has been confirmed to provide drinking water with PFAS concentrations below Maine Interim Standards. One overburden drinking water well (52-13) and one bedrock well (46-63A) are no longer in use and the home is serviced by a bedrock drinking water well that was tested below Maine Interim Standards (52-13) or received a POET (46-63). One residence (40-29) that shares a private well with the residence at 40-28 does not currently have water service to the building due to a compromised water line from the well location. Once this residence repairs the damaged service line, a POET will be installed if requested by the homeowner. Property 52-58 has been identified to share a well with property 52-59 (POET installed) but has been unresponsive to requests of offered bottled water and/or installation of a POET system. Based on these data and as shown on Figure 3, the criteria described above have been met to demonstrate delineation of PFAS impacts to private drinking water wells related to the Site. Therefore, additional residential water supply well sampling and treatment is not warranted at this time.

## 6.0 CONCLUSIONS/RECOMMENDATIONS

Work completed and results observed to date include the following:

- Sampling of 52 residential supply wells (two of which no longer service a residence and are not used for drinking water use) with analysis of PFOA, PFOS, PFHpA, PFNA, PFDA, and PFHxS.
- Results indicated that 29 of the sampled wells contained PFAS concentrations above the Maine Interim Standard for PFAS of 20 ng/L, and 27 wells were currently in use for drinking water purposes. Each of the locations where the well was being used for drinking water were offered bottled water as an interim measure.
- 26 residences were provided with POET systems to return drinking water to concentrations below Maine Interim Standards for PFAS prior to use. One property, 52-76, has been offered a POET system based on sample results collected in January 2023 and coordination for installment of that system is ongoing.
- Two residences currently being serviced by wells with PFAS detected above the Maine Interim Standards did not receive POET systems due to no response (52-58) and a compromised water line to the house (40-29).
- Efficacy sampling of the 26 POET systems has confirmed that the systems are operating as intended and are providing treated drinking water that does not contain PFAS above the Maine Interim Standard.

Based on the data and information presented herein, residential well sampling and POET installations are complete as the extent of private well impacts above the Maine Interim Standard for PFAS have been identified and delineated. No further residential well sampling or POET installations are planned.

As described in **Appendix C**, POET Operations and Maintenance Plan, ongoing system monitoring will occur during POET operation over the next two calendar years with the frequency and protocols described herein. Future O&M monitoring will continue but the protocols will be assessed after two years and any necessary modifications will be made at that time. Additionally, carbon changeout will occur as dictated by sampling results and assessing any breakthrough of PFAS between the two carbon canisters installed for each system. Sanborn Head and TTI will work with the WEI or similar contractor to perform any required maintenance.

Ongoing voluntary investigation to assess potential sources of the PFAS detected in residential wells is planned for Spring 2023.



## Tables

Table 1  
Residential Property Summary  
North Monmouth PFAS Site  
North Monmouth, Maine

| Map | Parcel | Street Address        | Well Information       | Date(s) Sampled                      | Bottled Water Offered? | POET Installed Date | POET Sampling Date               |
|-----|--------|-----------------------|------------------------|--------------------------------------|------------------------|---------------------|----------------------------------|
| 40  | 15     | 41 Highland Terrace   | Dug Well               | 3/10/2022                            | No                     | NA                  | NA                               |
| 40  | 18     | 29 Highland Terrace   | Drilled Well           | 6/1/2022                             | No                     | NA                  | NA                               |
| 40  | 27     | 29 Old Lewiston Road  | Unknown                | 10/21/2022                           | NA                     | NA                  | NA                               |
| 40  | 28     | 37 North Main Street  | Drilled Well           | 8/24/2022                            | Yes                    | 11/3/2022           | 12/20/2022                       |
| 40  | 29     | 44 North Main Street  | Shared Well with 40-28 | NA                                   | Yes                    | NA**                | NA                               |
| 40  | 30     | 36 North Main Street  | Drilled Well           | 8/24/2022                            | Yes                    | 11/3/2022           | 12/20/2022                       |
| 40  | 31     | 59 Old Lewiston Road  | Unknown                | No Response To Sampling Request      | NA                     | NA                  | NA                               |
| 40  | 32     | 68 Old Lewiston Road  | Unknown                | 11/30/2022                           | NA                     | NA                  | NA                               |
| 40  | 33     | 60 Old Lewiston Road  | Unknown                | 10/19/2022                           | NA                     | NA                  | NA                               |
| 40  | 35     | 48 Old Lewiston Road  | Dug Well               | 8/25/2022                            | Yes                    | 11/3/2022           | 12/21/2022                       |
| 40  | 37     | 30 Old Lewiston Road  | Unknown                | 10/20/2022                           | NA                     | NA                  | NA                               |
| 40  | 40     | 16 North Main Street  | Unknown                | 10/19/2022                           | NA                     | NA                  | NA                               |
| 40  | 41     | 6 North Main Street   | Unknown                | No Response To Sampling Request      | NA                     | NA                  | NA                               |
| 40  | 42     | 2 North Main Street   | Unknown                | Not Available for Sampling Per Owner | NA                     | NA                  | NA                               |
| 46  | 63     | 116 North Main Street | (2) Drilled Wells      | 12/29/2021, 10/4/2019, 2/3/2022      | Yes                    | 8/10/2022           | 10/19/2022; 1/12/2023; 1/19/2023 |
| 46  | 64     | 75 Old Lewiston Road  | Unknown                | 10/21/2022                           | NA                     | NA                  | NA                               |
| 46  | 97     | 117 Old Lewiston Road | Unknown                | 10/21/2022                           | NA                     | NA                  | NA                               |
| 52  | 1      | 49 North Main Street  | Drilled Well           | 6/1/2022                             | Yes                    | 7/29/2022           | 9/15/2022                        |

**Table 1  
Residential Property Summary  
North Monmouth PFAS Site  
North Monmouth, Maine**

| Map | Parcel | Street Address        | Well Information  | Date(s) Sampled                         | Bottled Water Offered? | POET Installed Date | POET Sampling Date    |
|-----|--------|-----------------------|---|---|------------------------|---------------------|-----------------------|
| 52  | 2      | 53 North Main Street  | Drilled Well  | 8/24/2022                               | Yes                    | 11/1/2022           | 12/21/2022            |
| 52  | 3      | 55 North Main Street  | Shared Well with 52-4                                     | NA                                      | Yes                    | 11/1/2022           | 12/20/2022; 1/12/2023 |
| 52  | 4      | 59 North Main Street  | Drilled Well  | 8/24/2022                               | Yes                    | 11/1/2022           | 12/20/2022            |
| 52  | 5      | 79 North Main Street  | Drilled Well  | 9/15/2022                               | Yes*                   | NA                  | NA                    |
| 52  | 8      | 57 Highland Terrace   | Drilled Well  | No Response To Sampling Request         | NA                     | NA                  | NA                    |
| 52  | 9      | 59 Highland Terrace   | Drilled Well  | 8/25/2022                               | No                     | NA                  | NA                    |
| 52  | 10     | 61 Highland Terrace   | Drilled Well  | 6/1/2022                                | No                     | NA                  | NA                    |
| 52  | 11     | 65 Highland Terrace   | Unknown   | No Response To Sampling Request         | NA                     | NA                  | NA                    |
| 52  | 12     | 62 Highland Terrace   | Drilled Well  | 2/22/2022                               | Yes                    | 8/23/2022           | 12/21/2022            |
| 52  | 13     | 52 Highland Terrace   | Drilled and Dug Well (Dug Well Sampled - Non Potable Use) | 3/17/2022 (Dug);<br>9/15/2022 (Drilled) | No                     | NA                  | NA                    |
| 52  | 14     | 58 Highland Terrace   | Drilled Well  | 3/17/2022                               | Yes***                 | NA                  | NA                    |
| 52  | 16     | 38 Highland Terrace   | Dug Well  | 8/25/2022                               | No                     | NA                  | NA                    |
| 52  | 17     | 26 Highland Terrace   | Dug Well  | No Response To Sampling Request         | NA                     | NA                  | NA                    |
| 52  | 18     | 20 Highland Terrace   | Unknown   | No Response To Sampling Request         | NA                     | NA                  | NA                    |
| 52  | 19     | 70 Highland Terrace   | Drilled Well  | 8/25/2022                               | No                     | NA                  | NA                    |
| 52  | 20     | 69 Highland Terrace   | Unknown   | No Response To Sampling Request         | NA                     | NA                  | NA                    |
| 52  | 23     | 147 North Main St     | Drilled Well  | 2/3/2022                                | No                     | NA                  | NA                    |
| 52  | 25     | 151 North Main Street | Drilled Well  | 6/23/2022                               | No                     | NA                  | NA                    |

**Table 1  
Residential Property Summary  
North Monmouth PFAS Site  
North Monmouth, Maine**

| Map | Parcel | Street Address                       | Well Information | Date(s) Sampled                                       | Bottled Water Offered? | POET Installed Date | POET Sampling Date   |
|-----|--------|--------------------------------------|------------------|---|------------------------|---------------------|--|
| 52  | 45     | 154 North Main Street                | Drilled Well     | 6/1/2022  | No                     | NA                  | NA   |
| 52  | 46     | 150 North Main Street                | Drilled Well     | 3/10/2022   | Yes                    | 8/26/2022           | 10/21/2022   |
| 52  | 47     | 144 North Main Street                | Dug Well         | 6/23/2022   | Yes                    | 11/1/2022           | 12/21/2022   |
| 52  | 49     | 5 New Street                         | Drilled Well     | 2/10/2022   | Yes                    | 8/10/2022           | 10/19/2022   |
| 52  | 50     | 9 New Street                         | Drilled Well     | 2/3/2022  | Yes                    | 7/29/2022           | 9/15/2022  |
| 52  | 51     | 13 New Street                        | Drilled Well     | 2/3/2022  | Yes                    | 8/10/2022           | 10/19/2022   |
| 52  | 52     | 17 New Street                        | Drilled Well     | 2/10/2022   | No                     | NA                  | NA   |
| 52  | 53-1   | 25 New Street                        | Drilled Well     | 2/10/2022   | No                     | NA                  | NA   |
| 52  | 54     | 35 New Street                        | Drilled Well     | 2/3/2022  | No                     | NA                  | NA   |
| 52  | 55     | 43 New Street                        | Dug Well         | 6/23/2022   | NA                     | NA                  | NA   |
| 52  | 56     | 25 New Street                        | Drilled Well     | No Response To Sampling Request                       | NA                     | NA                  | NA   |
| 52  | 57     | 20 New Street                        | Drilled Well     | 2/3/2022  | No                     | NA                  | NA   |
| 52  | 58     | 16 New Street                        | Unknown          | No Response To Sampling Request                       | NA                     | NA                  | NA   |
| 52  | 59     | 12 New Street                        | Drilled Well     | 12/29/2021  | Yes                    | 8/10/2022           | 10/20/2022   |
| 52  | 60     | 8 New Street                         | Unknown          | Unavailable for Sampling - Property Appears Abandoned | NA                     | NA                  | NA   |
| 52  | 61     | 130 North Main Street                | Drilled Well     | 12/29/2021  | Yes                    | 8/10/2022           | 10/19/2022   |
| 52  | 63     | 128 North Main Street (Wilson Store) | Drilled Well     | 12/29/2021  | Yes                    | 8/10/2022           | Unable to Collect - Property Unaccessible/Owner Unresponsive |
| 52  | 64     | 7 Holeway Lane                       | Drilled Well     | No Response To Sampling Request                       | NA                     | NA                  | NA   |

**Table 1  
Residential Property Summary  
North Monmouth PFAS Site  
North Monmouth, Maine**

| Map | Parcel | Street Address        | Well Information | Date(s) Sampled                        | Bottled Water Offered? | POET Installed Date                      | POET Sampling Date                       |
|-----|--------|-----------------------|------------------|--|------------------------|--|--|
| 52  | 65     | 10 Holeway Lane       | Drilled Well     | 12/29/2021                             | Yes                    | 7/29/2022                                | 9/15/2022                                |
| 52  | 66     | 6 Holeway Lane        | Drilled Well     | 11/24/2021                             | Yes                    | 7/29/2022                                | 9/16/2022                                |
| 52  | 67     | 124 North Main Street | Dug Well         | 12/29/2021                             | Yes                    | 8/23/2022                                | 10/20/2022                               |
| 52  | 70     | 98 North Main Street  | Dug Well         | 2/10/2022                              | Yes                    | 8/26/2022                                | 10/21/2022                               |
| 52  | 71     | 94 North Main Street  | Drilled Well     | 2/10/2022                              | Yes                    | 8/23/2022                                | 10/21/2022                               |
| 52  | 72     | 90 North Main Street  | Unknown          | No Response To Sampling Request        | NA                     | NA                                       | NA                                       |
| 52  | 73     | 86 North Main Street  | Drilled Well     | 2/22/2022                              | Yes                    | NA                                       | NA                                       |
| 52  | 74     | 84 North Main Street  | Drilled Well     | 2/10/2022                              | Yes                    | 8/23/2022                                | 12/21/2022                               |
| 52  | 75     | 84 North Main Street  | Unknown          | NA - Bottled Water Request Sent        | Yes                    | NA                                       | NA                                       |
| 52  | 76     | 80 North Main Street  | Unknown          | 1/12/2023 - Bottled Water Request Sent | Yes                    | POET Request Sent - Install Date Pending | POET Request Sent - Install Date Pending |
| 52  | 77     | 70 North Main Street  | Dug Well         | 3/10/2022                              | Yes                    | 10/7/2022                                | 12/20/2022; 1/19/2023                    |
| 52  | 78     | 74 North Main Street  | Drilled Well     | 3/10/2022                              | Yes                    | 8/26/2022                                | 11/30/2022                               |
| 52  | 79     | 60 North Main Street  | Drilled Well     | 6/1/2022                               | Yes                    | 10/7/2022                                | 11/30/2022                               |

Notes:

Accepted Bottled Water Offer as of February 15, 2023

Unable to Contact for Sampling

NA - Not Applicable

\*\*\* indicates offered bottled water prior to sampling as a pre-cautionary measure. Sampling indicated that well is below Maine Interim Standard so bottled water has been termina

\*\*\*\* indicates that the property water line is currently compromised and do not have well water servicing property. No POET has been installed.

\*\*\*\*\* indicates property was below Maine Interim Standard but offered bottled water as a pre-cautionary measure.

Table 2  
Summary of Analytical Results  
North Monmouth PFAS Site  
North Monmouth, Maine

| Sample Location     | Sample Date | Sample Type | Perfluorheptanoic Acid (PFHpA) | Perfluorooctanoic Acid (PFOA) | Perfluorononanoic Acid (PFNA) | Perfluorodecanoic Acid (PFDA) | Perfluorohexanesulfonic Acid (PFHxS) | Perfluorooctanesulfonic Acid (PFOS) | Total PFOA + PFOS + PFHpA + PFNA + PFDA + PFHxS |
|---------------------|-------------|-------------|--------------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------------|-------------------------------------|---|
| Maine Interim Level |             |             | 20                             | 20                            | 20                            | 20                            | 20                                   | 20                                  | 20  |
| 40-15               | 3/10/2022   | N           | <1.9                           | 3.6                           | <1.9                          | <1.9                          | 2.1                                  | 2.6                                 | 8.3   |
| 40-18               | 6/1/2022    | N           | <1.6                           | <1.6                          | <1.6                          | <1.6                          | <1.6                                 | <1.6                                | ND  |
| 40-27               | 10/21/2022  | N           | <1.6                           | <1.6                          | <1.6                          | <1.6                          | <1.6                                 | <1.6                                | ND  |
| 40-28/40-29         | 8/24/2022   | N           | 6.7                            | <b>35</b>                     | <1.7                          | <1.7                          | 3.3                                  | 12                                  | <b>57</b>                                       |
| 40-30               | 8/24/2022   | N           | 4.4                            | <b>27</b>                     | <1.7                          | <1.7                          | 1.9                                  | 8.4                                 | <b>41.7</b>                                     |
| 40-32               | 11/30/2022  | N           | <1.8                           | <1.8                          | <1.8                          | <1.8                          | <1.8                                 | <1.8                                | ND  |
| 40-33               | 10/19/2022  | N           | 0.56 J                         | 3.3                           | <1.7                          | <1.7                          | 0.51 J                               | 2.4                                 | 6.77  |
| 40-35               | 8/25/2022   | N           | 6.2                            | <b>27</b>                     | 0.54 J                        | <1.6                          | 2.2                                  | 12                                  | <b>47.94</b>                                    |
| 40-37               | 10/20/2022  | N           | <1.6                           | 2.4                           | <1.6                          | <1.6                          | <1.6                                 | 1.2 J                               | 3.6   |
| 40-40               | 10/19/2022  | N           | <1.6                           | <1.6                          | <1.6                          | <1.6                          | <1.6                                 | <1.6                                | ND  |
| 46-63               | 12/29/2021  | N           | 3.1                            | <b>22</b>                     | <1.9                          | <1.9                          | 1.8 J                                | 3.8                                 | <b>30.7</b>                                     |
| 46-63 Sink          | 1/19/2023   | N           | <1.6                           | <1.6                          | <1.6                          | <1.6                          | <1.6                                 | <1.6                                | ND  |
| 46-63A              | 10/4/2019   | N           | 1.1 J                          | 7.9                           | <1.9                          | <1.9                          | 1.3 JB                               | <b>29</b>                           | <b>39.3</b>                                     |
| 46-63A              | 2/3/2022    | N           | 1.3 J                          | 11                            | <1.6                          | <1.6                          | 0.87 J                               | 18                                  | <b>31.17</b>                                    |
| 46-63A              | 2/3/2022    | FD          | 0.71 J                         | 5.9                           | <1.7                          | 0.34 J                        | <1.7                                 | <b>27</b>                           | <b>33.95</b>                                    |
| 46-64               | 10/21/2022  | N           | 1.3 J                          | 5.4                           | <1.7                          | <1.7                          | 0.60 J                               | 2.6                                 | 9.9   |
| 46-97               | 10/21/2022  | N           | <1.7                           | 1.0 J                         | <1.7                          | <1.7                          | <1.7                                 | <1.7                                | 1.0   |
| 52-1                | 6/1/2022    | N           | 7.1                            | <b>39</b>                     | <1.6                          | <1.6                          | 5.9                                  | <b>28</b> JHB                       | <b>80.0</b>                                     |
| 52-2                | 8/24/2022   | N           | 2.7                            | 18                            | <1.7                          | <1.7                          | 1.7                                  | 11                                  | <b>33.4</b>                                     |
| 52-3/52-4           | 8/24/2022   | N           | 5.7                            | <b>39</b>                     | <1.6                          | <1.6                          | 2.8                                  | <b>22</b>                           | <b>69.5</b>                                     |
| 52-5                | 9/15/2022   | N           | 1.3 J                          | 5.4                           | <1.7                          | <1.7                          | 0.68 J                               | <1.7                                | 7.38  |
| 52-9                | 8/25/2022   | N           | <1.6                           | <1.6                          | <1.6                          | <1.6                          | <1.6                                 | <1.6                                | ND  |
| 52-10               | 6/1/2022    | N           | <1.6                           | 1.3 J                         | <1.6                          | <1.6                          | <1.6                                 | 0.53 JB                             | 1.83  |
| 52-12               | 2/22/2022   | N           | 3.6                            | <b>29</b>                     | <1.8                          | <1.8                          | 2.7                                  | 7.8 I                               | <b>43.1</b>                                     |
| 52-13               | 3/17/2022   | N           | 4.1                            | <b>25</b>                     | 0.41 J                        | <1.8                          | 2.4                                  | 12                                  | <b>43.91</b>                                    |
| 52-13               | 9/15/2022   | N           | <1.6                           | 3.9                           | <1.6                          | <1.6                          | 0.88 J                               | 2.5 I                               | 7.28  |
| 52-14               | 3/17/2022   | N           | 1.3 J                          | 12                            | <1.9                          | <1.9                          | 1.6 J                                | 4.9 I                               | 19.8  |
| 52-16               | 8/25/2022   | N           | <1.7                           | 0.53 JB                       | <1.7                          | <1.7                          | <1.7                                 | <1.7                                | 0.53  |
| 52-19               | 8/25/2022   | N           | <1.6                           | 1.8                           | <1.6                          | <1.6                          | <1.6                                 | 0.57 J                              | 2.37  |
| 52-23               | 2/3/2022    | N           | <1.9                           | <1.9                          | <1.9                          | <1.9                          | <1.9                                 | <1.9                                | ND  |
| 52-25               | 6/23/2022   | N           | 0.50 J                         | 3.2                           | <1.6                          | <1.6                          | 0.59 J                               | 0.92 J                              | 5.21  |
| 52-45               | 6/1/2022    | N           | 0.56 J                         | 3.6                           | <1.7                          | <1.7                          | 0.51 J                               | 0.88 JB                             | 5.55  |
| 52-46               | 3/10/2022   | N           | 4.3                            | <b>25</b>                     | <1.8                          | <1.8                          | 2.5                                  | 4.1 I                               | <b>35.9</b>                                     |
| 52-47               | 6/23/2022   | N           | 8.4                            | <b>68</b>                     | <1.7                          | <1.7                          | 5.9                                  | 10                                  | <b>92.3</b>                                     |
| 52-49               | 2/10/2022   | N           | 3.3                            | <b>33</b>                     | <1.9                          | <1.9                          | 4.4                                  | 2.6 I                               | <b>43.3</b>                                     |
| 52-50               | 2/3/2022    | N           | 3.4                            | <b>35</b>                     | <1.7                          | <1.7                          | 4.9                                  | 2.6 I                               | <b>45.9</b>                                     |
| 52-50               | 2/3/2022    | FD          | 3.3                            | <b>32</b>                     | <1.6                          | <1.6                          | 4.6                                  | 2.5                                 | <b>42.4</b>                                     |
| 52-51               | 2/3/2022    | N           | 1.8                            | 19                            | <1.7                          | <1.7                          | 3.1                                  | 1.9 I                               | <b>25.8</b>                                     |
| 52-52               | 2/10/2022   | N           | 0.66 J                         | 6.3                           | <1.9                          | <1.9                          | 1.1 J                                | 2                                   | 10.06   |
| 52-53-1             | 2/10/2022   | N           | 0.30 J                         | 3.4                           | <1.9                          | <1.9                          | 0.72 J                               | <1.9                                | 4.42  |
| 52-54               | 2/3/2022    | N           | <1.8                           | 1.2 J                         | <1.8                          | <1.8                          | <1.8                                 | <1.8                                | 1.2   |
| 52-55               | 6/23/2022   | N           | 1.8                            | 8.6                           | <1.7                          | <1.7                          | 0.91 J                               | 2.7                                 | 14.01   |
| 52-57               | 2/3/2022    | N           | <1.8                           | 2.1                           | <1.8                          | <1.8                          | 1.2 J                                | 2.4 I                               | 5.7   |
| 52-59               | 12/29/2021  | N           | 1.6 J                          | 16                            | <1.9                          | <1.9                          | 2.6                                  | 1.6 JI                              | <b>21.8</b>                                     |
| 52-61               | 12/29/2021  | N           | 2.6                            | <b>24</b>                     | <2.0                          | <2.0                          | 3.7                                  | 2.5 I                               | <b>32.8</b>                                     |
| 52-63               | 12/29/2021  | N           | 2.3                            | <b>21</b>                     | <1.9                          | <1.9                          | 3.5                                  | 1.6 JI                              | <b>28.4</b>                                     |
| 52-65               | 12/29/2021  | N           | 3.2                            | <b>36</b>                     | <2.0                          | <2.0                          | 3.9                                  | 9.1 I                               | <b>52.2</b>                                     |
| 52-66               | 11/24/2021  | N           | 3.9                            | <b>39</b>                     | <1.9                          | <1.9                          | 3.5                                  | 8.4 I                               | <b>54.8</b>                                     |
| 52-67               | 12/29/2021  | N           | 8.6                            | <b>53</b>                     | 1.3 J                         | 0.36 J                        | 3.5                                  | <b>33</b>                           | <b>99.76</b>                                    |
| 52-70               | 2/10/2022   | N           | 6.7                            | <b>31</b>                     | 0.26 J                        | <1.9                          | 2.3                                  | 4.8 I                               | <b>45.06</b>                                    |
| 52-71               | 2/10/2022   | N           | 5.8                            | <b>25</b>                     | 0.26 J                        | <1.9                          | 2.0                                  | 3.6                                 | <b>36.66</b>                                    |
| 52-73               | 2/22/2022   | N           | 2.4                            | 14                            | <1.7                          | <1.7                          | 2.0                                  | <1.7                                | 18.4  |
| 52-74               | 2/10/2022   | N           | <b>22</b>                      | <b>120</b>                    | 2.2                           | 0.79 J                        | 6.5                                  | <b>30</b>                           | <b>181.49</b>                                   |
| 52-76               | 1/12/2023   | N           | 7.3                            | <b>34</b>                     | <1.6                          | <1.6                          | 2.1                                  | 4.2 I                               | <b>47.6</b>                                     |
| 52-77               | 3/10/2022   | N           | 3.3                            | 17                            | <1.8                          | <1.8                          | 1.5 J                                | 2.9                                 | <b>24.7</b>                                     |
| 52-78               | 3/10/2022   | N           | 3.3                            | <b>29</b>                     | <1.9                          | <1.9                          | 3.9                                  | 2.6 I                               | <b>38.8</b>                                     |
| 52-79               | 6/1/2022    | N           | 15 B                           | <b>88</b>                     | 0.79 J                        | <1.6                          | 5.9                                  | <b>65</b> B                         | <b>174.69</b>                                   |
| Fire Station        | 2/14/2022   | N           | 6.74                           | <b>24.3</b>                   | <2                            | <2                            | 2.21                                 | <b>25.8</b>                         | <b>59.05</b>                                    |
| Fire Station        | 3/24/2022   | N           | 4.24                           | 15.1                          | 0.596 J                       | <1.83                         | 1.95                                 | <b>22.9</b>                         | <b>44.8</b>                                     |
| Fore Bay            | 6/23/2022   | N           | 0.82 J                         | 2.1                           | <1.6                          | <1.6                          | <1.6                                 | 1.4 J                               | 4.32  |
| Mill Pond           | 6/23/2022   | N           | 0.79 J                         | 1.5 J                         | <1.6                          | <1.6                          | <1.6                                 | 2.0                                 | 4.29  |
| MW-106-16           | 3/17/2022   | N           | <b>63</b>                      | <b>210</b>                    | 17                            | <b>20</b>                     | 15                                   | <b>300</b>                          | <b>625</b>                                      |
| MW-203C             | 4/1/2022    | N           | <b>31</b>                      | <b>140</b>                    | 3.3                           | <1.9                          | 10                                   | <b>83</b>                           | <b>267.3</b>                                    |
| MW-204A             | 10/4/2019   | N           | 0.27 J                         | 1.2 J                         | <2                            | <2                            | 0.46 JB                              | 2.0 I                               | 3.93  |
| MW-204A             | 4/1/2022    | N           | <1.8                           | <1.8                          | <1.8                          | <1.8                          | <1.8                                 | <1.8                                | ND  |
| MW-204B             | 4/1/2022    | N           | 6.8                            | <b>29</b>                     | 1.2 J                         | 4.3                           | 2                                    | 1.5 JI                              | <b>44.8</b>                                     |
| POD-1               | 6/23/2022   | N           | <b>63</b>                      | <b>190</b>                    | <b>25</b>                     | <b>66</b>                     | 13                                   | <b>500</b>                          | <b>857</b>                                      |
| POD-2               | 3/17/2022   | N           | <b>200</b>                     | <b>1,600</b>                  | <b>28</b> J                   | <100                          | <b>700</b>                           | <b>7,200</b>                        | <b>9,728</b>                                    |
| POD-2 ¥             | 6/23/2022   | N           | <b>280</b>                     | <b>1,600</b>                  | <b>39</b>                     | 8.2                           | <b>1,000</b>                         | <b>12,000</b>                       | <b>14,927</b>                                   |
| POD-2               | 6/23/2022   | N           | <b>290</b>                     | <b>1,500</b>                  | <b>38</b>                     | 9.1                           | <b>1,000</b>                         | <b>10,000</b>                       | <b>12,837</b>                                   |
| POD-3               | 6/23/2022   | N           | 1.4 J                          | 3.4                           | 0.75 J                        | <1.7                          | <1.7                                 | 8.0                                 | 13.55   |
| SW-1                | 6/23/2022   | N           | 0.98 J                         | 1.9                           | <1.7                          | <1.7                          | <1.7                                 | 1.3 J                               | 4.18  |
| SW-2                | 6/23/2022   | N           | 0.95 J                         | 2.2                           | <1.6                          | <1.6                          | <1.6                                 | 6.2                                 | 9.35  |
| SW-3                | 6/23/2022   | N           | 0.94 J                         | 2.2                           | <1.7                          | <1.7                          | <1.7                                 | 2.4                                 | 5.54  |
| W-1                 | 9/25/2018   | N           | <b>32</b>                      | <b>150</b>                    | 8.5                           | 8.1                           | 9.2 B                                | <b>150</b>                          | <b>357.8</b>                                    |
| W-1                 | 12/29/2021  | N           | <b>20</b>                      | <b>120</b>                    | 5.5                           | 9.2                           | 7.3                                  | <b>110</b>                          | <b>272</b>                                      |
| W-2                 | 3/10/2022   | N           | <b>42</b>                      | <b>250</b>                    | 7.7                           | 7.2                           | 12                                   | <b>180</b>                          | <b>498.9</b>                                    |

Notes:

- Samples from November 2021 were collected by Katahdin Analytical Services of Scarborough, Maine. Samples from September 2018 through April 2022 were collected by Wood E&I Solutions, Inc. of Portland, Maine.  
Fire Station sample from February 2022 was collected by the Town of Monmouth, Maine. Fire Station sample from March 2022 was collected by Maine DEP.  
Samples from June 2022 to present were collected by Sanborn Head.
- Concentrations are presented in nanograms per liter (ng/L) which are equivalent to parts per trillion (ppt).
- "FD" indicates a field duplicate sample was collected and analyzed.  
"N" indicates normal parent sample collected and analyzed.  
"ND" indicated non-detect.
- "<" indicates the analyte was not detected above the indicated laboratory reporting limit (RL).  
"B" indicates the the compound was present in the associated laboratory method blank or field QC blank.  
"E" indicated the concentration of the analyte exceeds the range of the calibration curve and/or linear range of the instrument.  
"F" and "I" indicates the result is an estimated maximum possible concentration.  
"J" indicates the result is less than the laboratory RL but greater than or equal to the laboratory method detection limit. The concentration is an approximate value.  
"JH" indicates the ion transition ratio is outside of acceptance criteria and the concentration should be considered estimated with a potential high bias.  
"¥" indicated the sample was centrifuged by the lab prior to analysis.
- "Maine Interim Level" refers to the State of Maine drinking water standard for PFAS for the individually or combined sum of six different PFAS compounds of 20 ng/L: PFOA, PFOS, PFHpA, PFNA, PFDA, and PFHxS.
- Bold** values exceed the Maine Interim Level.



**Table 3**  
**Summary of POET Analytical Results**  
**North Monmouth PFAS Site**  
**North Monmouth, Maine**

| Sample Location            | Sample Date | Sample Type | Total Flow (gallons) | Perfluoroheptanoic Acid (PFHpA) | Perfluorooctanoic Acid (PFDA) | Perfluorononanoic Acid (PFNA) | Perfluorodecanoic Acid (PFDA) | Perfluorohexanesulfonic Acid (PFHxS) | Perfluorooctanesulfonic Acid (PFOS) | Total PFOA + PFOS + PFHpA + PFNA + PFDA + PFHxS |
|----------------------------|-------------|-------------|----------------------|---------------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------------|-------------------------------------|---|
| <b>Maine Interim Level</b> |             |             |                      | 20                              | 20                            | 20                            | 20                            | 20                                   | 20                                  | 20  |
| 40-28 Pre                  | 12/20/2022  | N           | 3,883.94             | 7.2                             | 42                            | <1.7                          | <1.7                          | 3.6                                  | 66                                  | <b>118.8</b>                                    |
| 40-28 Mid                  | 12/20/2022  | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | 23                                  | <b>23</b>                                       |
| 40-28 Post                 | 12/20/2022  | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | <1.7                                | ND  |
| 40-30 Pre                  | 12/20/2022  | N           | 8,090.96             | 5.5                             | 32                            | <1.6                          | <1.6                          | 2.3                                  | 18                                  | <b>57.8</b>                                     |
| 40-30 Mid                  | 12/20/2022  | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | 40                                  | <b>40</b>                                       |
| 40-30 Post                 | 12/20/2022  | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | <1.7                                | ND  |
| 40-35 Pre                  | 12/21/2022  | N           | 4,865.85             | 7.0                             | 29                            | <1.6                          | <1.6                          | 2.2                                  | 24                                  | <b>62.2</b>                                     |
| 40-35 Mid                  | 12/21/2022  | N           |                      | <1.6                            | <1.6                          | <1.6                          | <1.6                          | <1.6                                 | <1.6                                | ND  |
| 40-35 Post                 | 12/21/2022  | N           |                      | <1.6                            | <1.6                          | <1.6                          | <1.6                          | <1.6                                 | <1.6                                | ND  |
| 46-63 Pre                  | 10/19/2022  | N           | 9,909.96             | 4.43                            | 23                            | <1.77                         | <1.77                         | 2.06                                 | 10.7                                | <b>40.19</b>                                    |
| 46-63 Mid                  | 10/19/2022  | N           |                      | <1.79                           | <1.79                         | <1.79                         | <1.79                         | <1.79                                | 8.57                                | 8.57  |
| 46-63 Post                 | 10/19/2022  | N           |                      | <1.8                            | <1.8                          | <1.8                          | <1.8                          | <1.8                                 | 9.93                                | 9.93  |
| 46-63 Pre                  | 1/12/2023   | N           | 23,108.20            | 6.2                             | 32                            | <1.8                          | <1.8                          | 2.4                                  | 6.0                                 | <b>46.6</b>                                     |
| 46-63 Mid                  | 1/12/2023   | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | <1.7                                | ND  |
| 46-63 Post                 | 1/12/2023   | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | <1.7                                | ND  |
| 52-1 Pre                   | 9/15/2022   | N           | 7,338.37             | 7.1                             | 42                            | <1.6                          | <1.6                          | 5.5                                  | 29                                  | <b>83.6</b>                                     |
| 52-1 Mid                   | 9/15/2022   | N           |                      | <1.6                            | <1.6                          | <1.6                          | <1.6                          | <1.6                                 | 2.1                                 | 2.1   |
| 52-1 Post                  | 9/15/2022   | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | 0.95                                | 0.95  |
| 52-2 Pre                   | 12/21/2022  | N           | 3,214.61             | 1.8                             | 11                            | <1.7                          | <1.7                          | <1.7                                 | 9.3                                 | <b>22.1</b>                                     |
| 52-2 Mid                   | 12/21/2022  | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | 2.2                                 | 2.2   |
| 52-2 Post                  | 12/21/2022  | N           |                      | <1.8                            | <1.8                          | <1.8                          | <1.8                          | <1.8                                 | <1.8                                | ND  |
| 52-3 Pre                   | 12/20/2022  | N           | 1,127.00             | 6.2                             | 38                            | <1.7                          | <1.7                          | 2.8                                  | 21                                  | <b>68.0</b>                                     |
| 52-3 Mid                   | 12/20/2022  | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | 2.0                                 | 2.0   |
| 52-3 Post                  | 12/20/2022  | N           |                      | <1.6                            | <1.6                          | <1.6                          | <1.6                          | <1.6                                 | 21                                  | <b>21.0</b>                                     |
| 52-3 Pre                   | 1/12/2023   | N           | 2,419.64             | 6.3                             | 42                            | <1.7                          | <1.7                          | 2.8                                  | 18                                  | <b>69.1</b>                                     |
| 52-3 Mid                   | 1/12/2023   | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | <1.7                                | ND  |
| 52-3 Post                  | 1/12/2023   | N           |                      | <1.6                            | <1.6                          | <1.6                          | <1.6                          | <1.6                                 | <1.6                                | ND  |
| 52-4 Pre                   | 12/20/2022  | N           | 5,786.08             | 6.2                             | 40                            | <1.7                          | <1.7                          | 2.9                                  | 21                                  | <b>70.1</b>                                     |
| 52-4 Mid                   | 12/20/2022  | N           |                      | <1.8                            | <1.8                          | <1.8                          | <1.8                          | <1.8                                 | <1.8                                | ND  |
| 52-4 Post                  | 12/20/2022  | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | <1.7                                | ND  |
| 52-12 Pre                  | 12/21/2022  | N           | 16,500.00            | 3.2                             | 21                            | <1.6                          | <1.6                          | 2.0                                  | 7.9                                 | <b>34.1</b>                                     |
| 52-12 Mid                  | 12/21/2022  | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | 3.6                                 | 3.6   |
| 52-12 Post                 | 12/21/2022  | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | <1.7                                | ND  |
| 52-46 Pre                  | 10/21/2022  | N           | 2,938.03             | 2.09                            | 19.0                          | <1.72                         | <1.72                         | 2.94                                 | <b>48.3</b>                         | <b>72.33</b>                                    |
| 52-46 Mid                  | 10/21/2022  | N           |                      | <1.74                           | <1.74                         | <1.74                         | <1.74                         | <1.74                                | <b>43.9</b>                         | <b>43.9</b>                                     |
| 52-46 Post                 | 10/21/2022  | N           |                      | <1.72                           | <1.72                         | <1.72                         | <1.72                         | <1.72                                | <1.72                               | ND  |
| 52-47 Pre                  | 12/21/2022  | N           | 3,990.86             | 5.6                             | <b>47</b>                     | <1.6                          | <1.6                          | 4.1                                  | 12                                  | <b>68.7</b>                                     |
| 52-47 Mid                  | 12/21/2022  | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | 3.0                                 | <b>3</b>  |
| 52-47 Post                 | 12/21/2022  | N           |                      | <1.8                            | <1.8                          | <1.8                          | <1.8                          | <1.8                                 | <1.8                                | ND  |
| 52-49 Pre                  | 10/19/2022  | N           | 3,721.61             | <b>3.38</b>                     | <b>29.1</b>                   | <1.73                         | <1.73                         | 5.14                                 | 11.5                                | <b>49.12</b>                                    |
| 52-49 Mid                  | 10/19/2022  | N           |                      | <1.72                           | <1.72                         | <1.72                         | <1.72                         | <1.72                                | <b>20.7</b>                         | <b>20.7</b>                                     |
| 52-49 Post                 | 10/19/2022  | N           |                      | <1.79                           | <1.79                         | <1.79                         | <1.79                         | <1.79                                | <1.79                               | ND  |
| 52-49 Post                 | 10/19/2022  | FD          |                      | <1.8                            | <1.8                          | <1.8                          | <1.8                          | <1.8                                 | <1.8                                | ND  |
| 52-50 Pre                  | 9/15/2022   | N           | 6,573.88             | 4.3                             | 33                            | <1.7                          | <1.7                          | 4.2                                  | 3.0                                 | <b>44.5</b>                                     |
| 52-50 Mid                  | 9/15/2022   | N           |                      | <1.6                            | <1.6                          | <1.6                          | <1.6                          | <1.6                                 | 1.1                                 | 1.1   |
| 52-50 Post                 | 9/15/2022   | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | 1.2                                 | 1.2   |
| 52-51 Pre                  | 10/19/2022  | N           | NM                   | 1.82                            | 16.2                          | <1.76                         | <1.76                         | 2.96                                 | <b>185</b>                          | <b>205.98</b>                                   |
| 52-51 Mid                  | 10/19/2022  | N           |                      | <1.75                           | <1.75                         | <1.75                         | <1.75                         | <1.75                                | 8.20                                | 8.2   |
| 52-51 Post                 | 10/19/2022  | N           |                      | <1.77                           | <1.77                         | <1.77                         | <1.77                         | <1.77                                | 2.63                                | 2.63  |
| 52-59 Pre                  | 10/20/2022  | N           | NM                   | <1.79                           | <b>12.2</b>                   | <1.79                         | <1.79                         | 2.12                                 | 2.29                                | <b>16.61</b>                                    |
| 52-59 Mid                  | 10/20/2022  | N           |                      | <1.76                           | <1.76                         | <1.76                         | <1.76                         | <1.76                                | 9.82                                | 9.82  |
| 52-59 Post                 | 10/20/2022  | N           |                      | <1.75                           | <1.75                         | <1.75                         | <1.75                         | <1.75                                | <1.75                               | ND  |
| 52-61 Pre                  | 10/19/2022  | N           | 11,205.28            | <b>9.18</b>                     | <b>56.6</b>                   | <b>5.12</b>                   | <1.78                         | <b>4.91</b>                          | <b>138</b>                          | <b>213.81</b>                                   |
| 52-61 Mid                  | 10/19/2022  | N           |                      | <1.78                           | <1.78                         | <1.78                         | <1.78                         | <1.78                                | 4.86                                | 4.86  |
| 52-61 Post                 | 10/19/2022  | N           |                      | <1.76                           | <1.76                         | <1.76                         | <1.76                         | <1.76                                | <1.76                               | ND  |
| 52-65 Pre                  | 9/15/2022   | N           | 3,614.03             | 2.5                             | <b>20</b>                     | <1.7                          | <1.7                          | 2.5                                  | 4.9                                 | <b>29.9</b>                                     |
| 52-65 Mid                  | 9/15/2022   | N           |                      | <1.6                            | <1.6                          | <1.6                          | <1.6                          | <1.6                                 | 1.4                                 | 1.4   |
| 52-65 Post                 | 9/15/2022   | N           |                      | <1.6                            | <1.6                          | <1.6                          | <1.6                          | <1.6                                 | <1.6                                | ND  |
| 52-66 Pre                  | 9/16/2022   | N           | 5,052.20             | 5.1                             | <b>42</b>                     | <1.7                          | <1.7                          | 4.0                                  | 13                                  | <b>64.1</b>                                     |
| 52-66 Mid                  | 9/16/2022   | N           |                      | <1.6                            | <1.6                          | <1.6                          | <1.6                          | <1.6                                 | <1.6                                | ND  |
| 52-66 Post                 | 9/16/2022   | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | 1.0                                 | 1   |
| 52-67 Pre                  | 10/20/2022  | N           | 6,236.09             | <b>23.5</b>                     | <b>118</b>                    | 4.07                          | <1.75                         | 5.22                                 | <b>139</b>                          | <b>289.79</b>                                   |
| 52-67 Mid                  | 10/20/2022  | N           |                      | <1.73                           | <1.73                         | <1.73                         | <1.73                         | <1.73                                | 13.6                                | 13.6  |
| 52-67 Post                 | 10/20/2022  | N           |                      | <1.74                           | <1.74                         | <1.74                         | <1.74                         | <1.74                                | <1.74                               | ND  |
| 52-70 Pre                  | 10/21/2022  | N           | 13,821.55            | 5.44                            | <b>25.8</b>                   | <1.76                         | <1.76                         | 2.16                                 | 11.2                                | <b>44.6</b>                                     |
| 52-70 Mid                  | 10/21/2022  | N           |                      | <1.73                           | <1.73                         | <1.73                         | <1.73                         | <1.73                                | <b>25.8</b>                         | <b>25.8</b>                                     |
| 52-70 Post                 | 10/21/2022  | N           |                      | <1.81                           | <1.81                         | <1.81                         | <1.81                         | <1.81                                | <1.81                               | ND  |
| 52-71 Pre                  | 10/21/2022  | N           | 4,525.19             | 4.87                            | <b>20.1</b>                   | <1.77                         | <1.77                         | <1.77                                | 3.39                                | <b>28.36</b>                                    |
| 52-71 Mid                  | 10/21/2022  | N           |                      | <1.77                           | <1.77                         | <1.77                         | <1.77                         | <1.77                                | <1.77                               | ND  |
| 52-71 Post                 | 10/21/2022  | N           |                      | <1.76                           | <1.76                         | <1.76                         | <1.76                         | <1.76                                | 5.96                                | 5.96  |
| 52-74 Pre                  | 12/21/2022  | N           | 4,361.47             | <b>28</b>                       | <b>130</b>                    | 3.2                           | <1.6                          | 6.5                                  | <b>68</b>                           | <b>235.7</b>                                    |
| 52-74 Mid                  | 12/21/2022  | N           |                      | <1.6                            | <1.6                          | <1.6                          | <1.6                          | <1.6                                 | 8.9                                 | 8.9   |
| 52-74 Post                 | 12/21/2022  | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | <1.7                                | ND  |

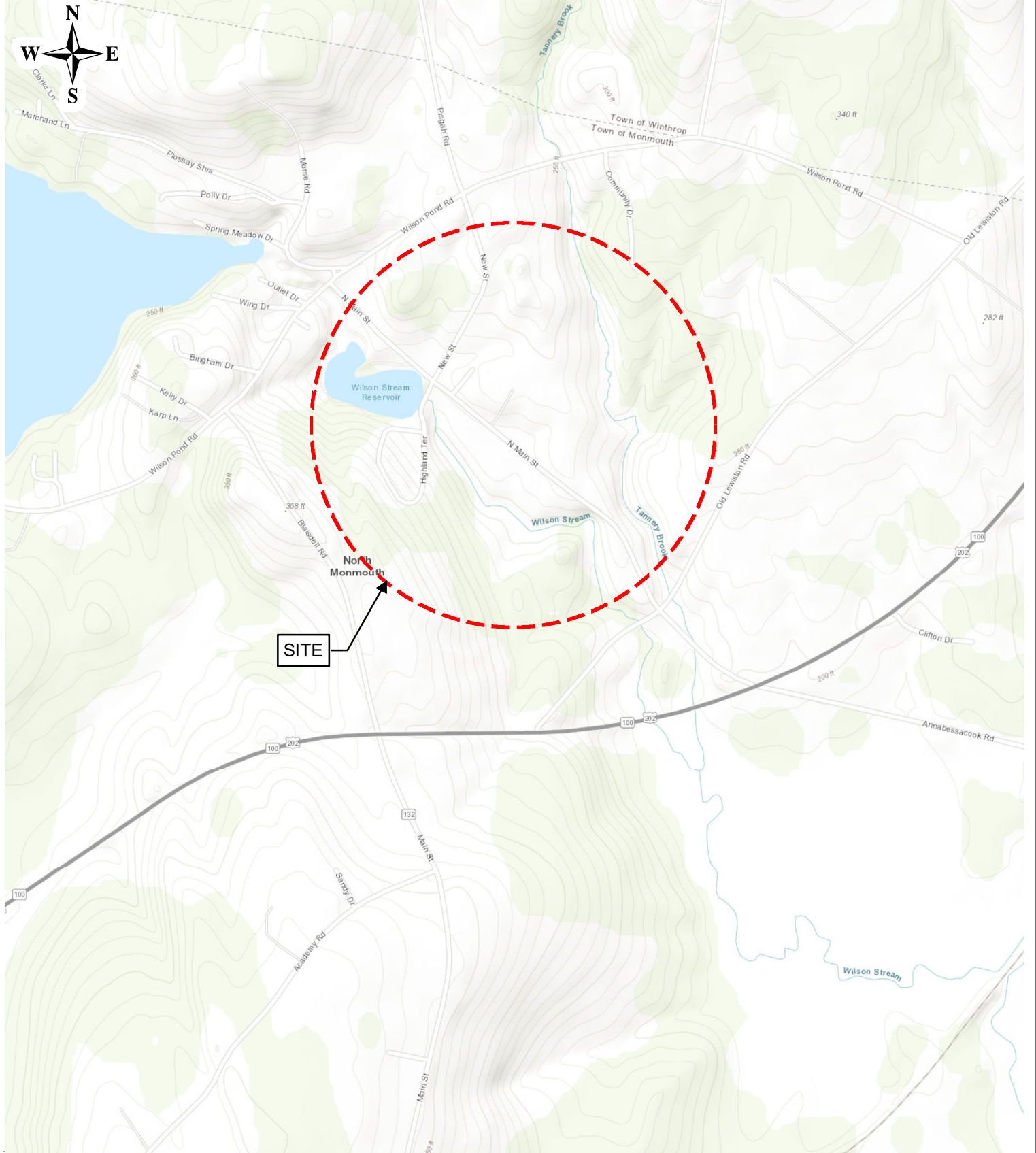
**Table 3**  
**Summary of POET Analytical Results**  
**North Monmouth PFAS Site**  
**North Monmouth, Maine**

| Sample Location            | Sample Date | Sample Type | Total Flow (gallons) | Perfluoroheptanoic Acid (PFHpA) | Perfluorooctanoic Acid (PFDA) | Perfluorononanoic Acid (PFNA) | Perfluorodecanoic Acid (PFDA) | Perfluorohexanesulfonic Acid (PFHxS) | Perfluorooctanesulfonic Acid (PFOS) | Total PFOA + PFOS + PFHpA + PFNA + PFDA + PFHxS |              |
|----------------------------|-------------|-------------|----------------------|---------------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------------|-------------------------------------|---|--------------|
| <b>Maine Interim Level</b> |             |             |                      | 20                              | 20                            | 20                            | 20                            | 20                                   | 20                                  | 20  |              |
| 52-77 Pre                  | 12/20/2022  | N           | 248.75               | 1.9                             | 9.6                           | <1.7                          | <1.7                          | <1.7                                 | 3.1                                 | I   | 14.6         |
| 52-77 Mid                  | 12/20/2022  | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | 4.8                                 |   | 4.8          |
| 52-77 Post                 | 12/20/2022  | N           |                      | 3.6                             | 6.2                           | <1.7                          | <1.7                          | <1.7                                 | <b>33</b>                           |   | <b>42.8</b>  |
| 52-77 Pre                  | 1/19/2023   | N           | 250.07               | 3.1                             | 15                            | <1.6                          | <1.6                          | 1.7                                  | 3.1                                 | I   | <b>22.9</b>  |
| 52-77 Mid                  | 1/19/2023   | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | <1.7                                |   | ND           |
| 52-77 Post                 | 1/19/2023   | N           |                      | <1.6                            | <1.6                          | <1.6                          | <1.6                          | <1.6                                 | <1.6                                |   | ND           |
| 52-78 Pre                  | 11/30/2022  | N           | 7,210.01             | 3.4                             | 17                            | <1.7                          | <1.7                          | <1.7                                 | 6.4                                 |   | <b>26.8</b>  |
| 52-78 Mid                  | 11/30/2022  | N           |                      | <1.8                            | <1.8                          | <1.8                          | <1.8                          | <1.8                                 | 5.7                                 |   | 5.7          |
| 52-78 Post                 | 11/30/2022  | N           |                      | <1.8                            | <1.8                          | <1.8                          | <1.8                          | <1.8                                 | <1.8                                |   | ND           |
| 52-78 Post                 | 11/30/2022  | FD          |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | <1.7                                |   | ND           |
| 52-79 Pre                  | 11/30/2022  | N           | 756.41               | <b>21</b>                       | <b>130</b>                    | <1.7                          | <1.7                          | 7.8                                  | <b>66</b>                           |   | <b>224.8</b> |
| 52-79 Mid                  | 11/30/2022  | N           |                      | <1.6                            | <1.6                          | <1.6                          | <1.6                          | <1.6                                 | 5.5                                 |   | 5.5          |
| 52-79 Post                 | 11/30/2022  | N           |                      | <1.7                            | <1.7                          | <1.7                          | <1.7                          | <1.7                                 | <1.7                                |   | ND           |

Notes:

- Concentrations are presented in nanograms per liter (ng/L) which are equivalent to parts per trillion (ppt).
- "FD" indicates a field duplicate sample was collected and analyzed.  
"N" indicates normal parent sample collected and analyzed.  
"ND" indicates non-detect.  
"NM" indicates not measured.
- "<" indicates the analyte was not detected above the indicated laboratory reporting limit (RL).  
"F" and "I" indicates the result is an estimated maximum possible concentration.  
"J" indicates the result is less than the laboratory RL but greater than or equal to the laboratory method detection limit. The concentration is an approximate value.
- "Maine Interim Level" refers to the State of Maine drinking water standard for PFAS for the individually or combined sum of six different PFAS compounds of 20 ng/L: PFOA, PFOS, PFHpA, PFNA, PFDA, and PFHxS.
- Bold** values exceed the Maine Interim Level.

## Figures



Drawn By: H. LaPointe  
 Designed By: A. Buchy  
 Reviewed By: R. Abell  
 Project No: 5197.01  
 Date: July 2022



Figure 1

# Locus Plan

North Monmouth PFAS Site  
 North Monmouth, Maine



Figure 2

# PFAS Results and Additional Sampling Locations

North Monmouth PFAS Site  
North Monmouth, Maine

Drawn By: H. LaPointe  
Designed By: A. Buchy  
Reviewed By: R. Abell  
Project No: 5197.01  
Date: February 2023

## Figure Narrative

This figure depicts the twenty-seven (27) properties whose drinking water wells have been sampled for the presence of PFAS by Wood Environmental, together with the thirty-nine (39) properties either sampled (27) or unresponsive/unavailable for sampling (12).

## Notes

1. Aerial Image Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community.
2. Locations georeferenced from "PFAS Results and Proposed Additional Sampling Locations" prepared by WOOD and should be considered approximate.
3. Data values displayed are for parent samples only, field duplicate data are not displayed.
4. ND = Non-detect
5. Property 42-61 (North Monmouth Fire Department) sampled by North Monmouth Fire Department in Feb 2022 and MEDEP in March 2022.

## Legend

- Drilled Well
- Dug Well
- Driven Point Well
- Monitoring Well
- Extraction Well
- Pore Water
- Surface Water

## Legend (continued)

- Property results greater than 20 ng/L sampled by separate entity
  - Unresponsive to Sampling Requests / Not Available for Sampling
  - Approximate Tax Parcel Boundary
  - Areas to Provide Bottled Water
  - Planned Additional Residential Well Sampling Locations
  - Residential Well Sampling Locations below 20 ng/L
- 52-74 181**  
PFOS + PFOA + PFHpA + PFNA + PFHxS + PFDA Results  
Units are ng/L (nanograms per liter)

175 87.5 0 175 350 Feet

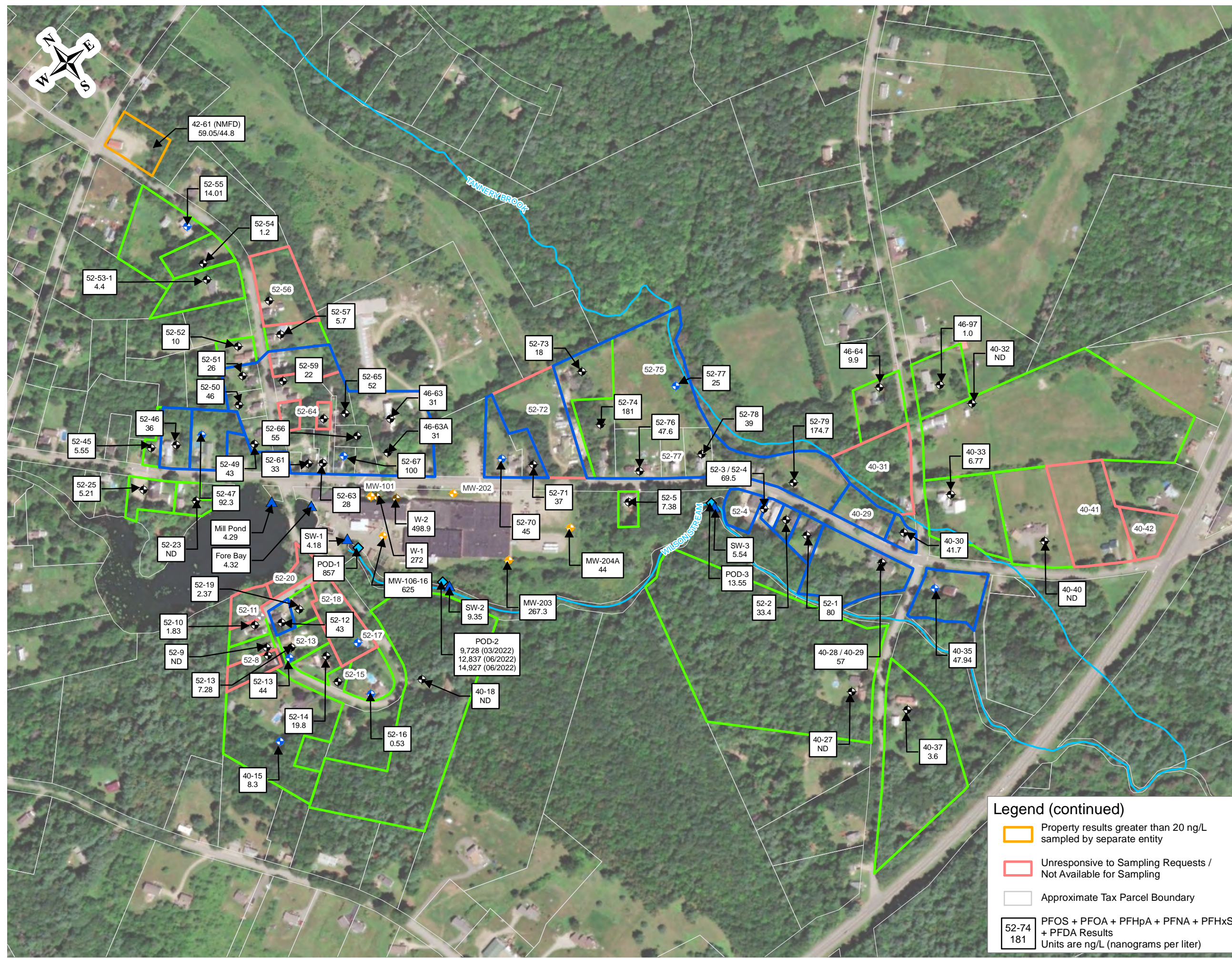




Figure 3

# PFAS Delineation Above Maine Interim Standard

North Monmouth PFAS Site  
North Monmouth, Maine

Drawn By: H. LaPointe  
Designed By: A. Buchy  
Reviewed By: R. Abell  
Project No: 5197.01  
Date: February 2023

## Figure Narrative

This figure depicts the twenty-seven (27) properties whose drinking water wells have been sampled for the presence of PFAS by Wood Environmental, together with the thirty-nine (39) properties either sampled (27) or unresponsive/unavailable for sampling (12).

## Notes

1. Aerial Image Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community.

2. Locations georeferenced from "PFAS Results and Proposed Additional Sampling Locations" prepared by WOOD and should be considered approximate.

3. Property 42-61 (North Monmouth Fire Department) sampled by North Monmouth Fire Department in Feb 2022 and MEDEP in March 2022.

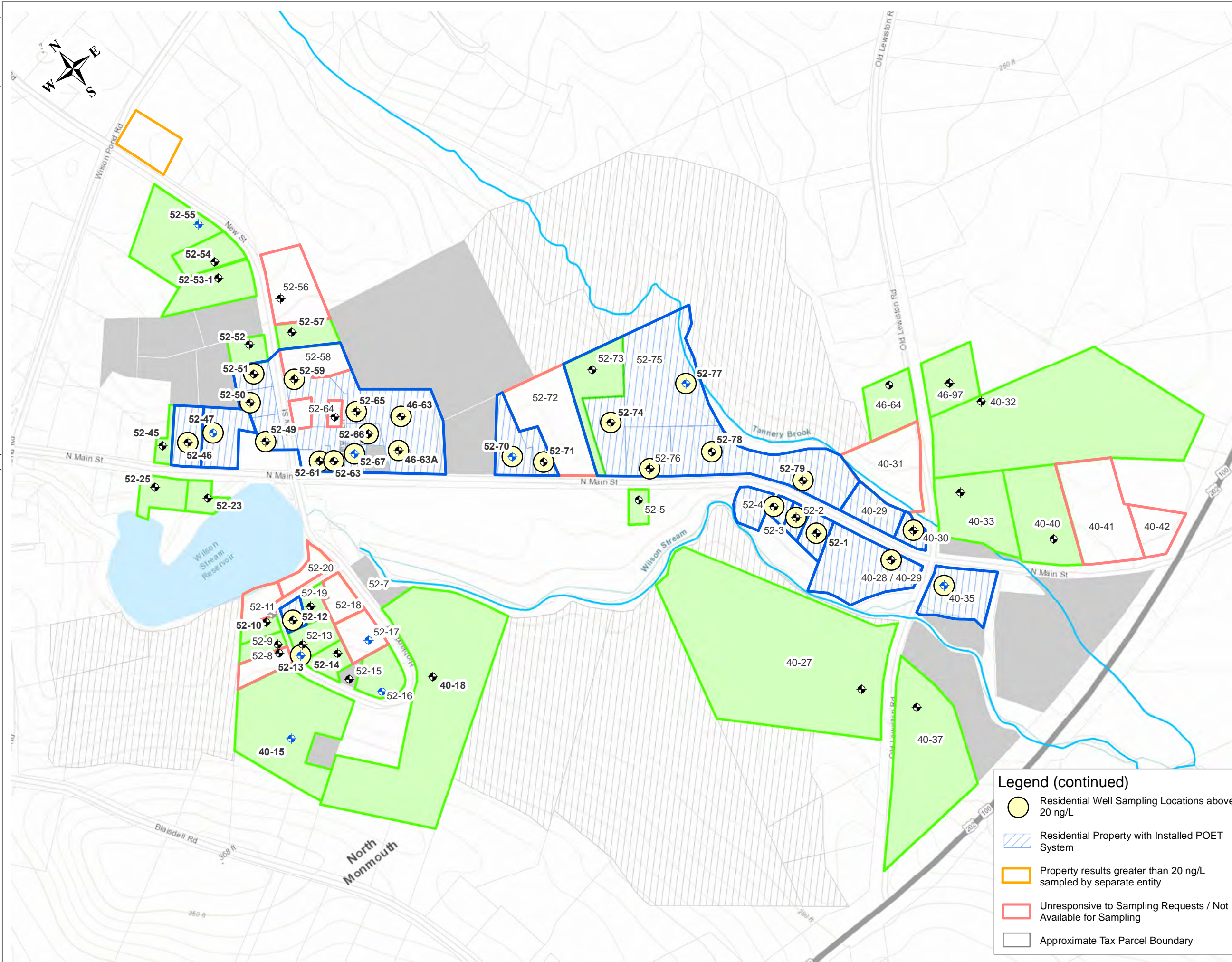
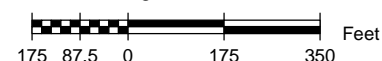
4. A POET system has been offered to property 52-76 based on analytical results received from January 2023 sampling.

## Legend

- Drilled Well
- Dug Well
- Driven Point Well
- Forested / underdeveloped land, unlikely to contain DW source
- Undeveloped, information indicating no drinking water source on Site
- Areas to Provide Bottled Water
- Planned Additional Residential Well Sampling Locations
- Residential Property Sampling Locations below 20 ng/L

## Legend (continued)

- Residential Well Sampling Locations above 20 ng/L
- Residential Property with Installed POET System
- Property results greater than 20 ng/L sampled by separate entity
- Unresponsive to Sampling Requests / Not Available for Sampling
- Approximate Tax Parcel Boundary



# **Appendix A**

## **Limitations**



## APPENDIX A

### LIMITATIONS

1. The observations described in this report were made under the conditions stated herein. The conclusions presented in this report were based solely upon the services described herein, and not on scientific tasks or procedures beyond the scope of described services or any time and budgetary constraints imposed by the Client.
2. Should additional information on environmental conditions at the site which is not contained in the report be obtained, such information should be brought to Sanborn Head's attention. We will evaluate such information and, on the basis of our evaluation, may modify the conclusions stated in this report.
3. The conclusions and recommendations contained in this report are based in part upon the data obtained from a limited number of soil and groundwater samples obtained from widely spaced subsurface explorations. The nature and extent of variations between these explorations may not become evident until further exploration. If variations or other latent conditions then appear evident, it will be necessary to re-evaluate the conclusions and recommendations of this report.
4. Water level observations have been made in the borings and/or monitoring wells at the times and under the conditions stated on the boring logs. However, it must be noted that fluctuations in the level of groundwater may occur due to variations in rainfall and other factors different from those prevailing at the time measurements were made.
5. Where such quantitative laboratory testing has been conducted by an outside laboratory, Sanborn Head has relied upon the data provided, and has not conducted an independent evaluation of the reliability of these data.
6. Chemical analyses have been performed for specific parameters during the course of this assessment, as described in the text. However, it should be noted that additional chemical constituents not searched for during the current study may be present in soil and/or groundwater at the site.



## **Appendix B-1**

### **Residential Well Sampling Laboratory Analytical Reports**

**Note: Historical analytical packages provided to Sanborn Head are included within Appendix B-1.**

December 15, 2021

Ms. Julie Ricardi  
Wood Environment & Infrastructure  
107 Black Point Road  
New Gloucester, ME 04260

RE: Katahdin Lab Number: SO8222  
Project ID: Tex Tech  
Project Manager: Ms. Heather Manz  
Sample Receipt Date(s): November 24, 2021

Dear Ms. Ricardi:

Please find enclosed the following information:

- \* Laboratory results from subcontracted analysis (es)
- \* Chain of Custody (COC)
- \* Login Report

A copy of the Chain of Custody is included in the paginated report. If requested, the original COC is attached as an addendum to this report.

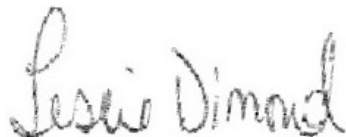
Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact the project manager listed above. The results contained in this report relate only to the submitted samples. This cover letter is an integral part of the ROA.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in an attached technical narrative or in the Report of Analysis.

We appreciate your continued use of our laboratory and look forward to working with you in the future. The following signature indicates technical review and acceptance of the data.

Please go to <http://www.katahdinlab.com/cert> for copies of Katahdin Analytical Services Inc. current certificates and analyte lists.

Sincerely,  
KATAHDIN ANALYTICAL SERVICES



**Leslie Dimond - Quality Assurance Officer**

12/15/2021

**Date**

## ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento  
880 Riverside Parkway  
West Sacramento, CA 95605  
Tel: (916)373-5600

Laboratory Job ID: 320-82303-1

Client Project/Site: PFAS, Maine Commercial Water

For:

Katahdin Analytical Services  
600 Technology Way  
Scarborough, Maine 04074

Attn: Heather Manz



Authorized for release by:  
12/14/2021 2:38:20 PM

Jill Kellmann, Client Service Manager  
(916)374-4402  
[Jill.Kellmann@Eurofinset.com](mailto:Jill.Kellmann@Eurofinset.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 2  |
| Definitions/Glossary . . . . .     | 3  |
| Case Narrative . . . . .           | 4  |
| Detection Summary . . . . .        | 5  |
| Client Sample Results . . . . .    | 6  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 17 |
| Sample Summary . . . . .           | 18 |
| Chain of Custody . . . . .         | 19 |
| Receipt Checklists . . . . .       | 20 |

# Definitions/Glossary

Client: Katahdin Analytical Services  
Project/Site: PFAS, Maine Commercial Water

Job ID: 320-82303-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| I         | Value is EMPC (estimated maximum possible concentration).  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

Eurofins TestAmerica, Sacramento

# Case Narrative

Client: Katahdin Analytical Services  
Project/Site: PFAS, Maine Commercial Water

Job ID: 320-82303-1

---

**Job ID: 320-82303-1**

---

**Laboratory: Eurofins TestAmerica, Sacramento**

---

## Narrative

---

### Receipt

The samples were received on 11/30/2021 11:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.8° C.

### LCMS

Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was above the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.



# Detection Summary

Client: Katahdin Analytical Services  
Project/Site: PFAS, Maine Commercial Water

Job ID: 320-82303-1

## Client Sample ID: 52-66

## Lab Sample ID: 320-82303-1

| Analyte                               | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|---------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorobutanoic acid (PFBA)         | 2.7    | J         | 4.8 | 2.3  | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoropentanoic acid (PFPeA)       | 2.2    |           | 1.9 | 0.47 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanoic acid (PFHxA)        | 4.5    |           | 1.9 | 0.55 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)       | 3.9    |           | 1.9 | 0.24 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)         | 39     |           | 1.9 | 0.81 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)   | 2.2    |           | 1.9 | 0.19 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS)  | 3.5    |           | 1.9 | 0.54 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanesulfonic Acid (PFHpS) | 0.32   | J         | 1.9 | 0.18 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)   | 8.4    | I         | 1.9 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                   | 47     |           | 1.9 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 52-66-BLK

## Lab Sample ID: 320-82303-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Katahdin Analytical Services  
 Project/Site: PFAS, Maine Commercial Water

Job ID: 320-82303-1

**Client Sample ID: 52-66**

**Lab Sample ID: 320-82303-1**

**Date Collected: 11/24/21 10:15**

**Matrix: Water**

**Date Received: 11/30/21 11:00**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result    | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|-----------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | 2.7       | J         | 4.8 | 2.3  | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | 2.2       |           | 1.9 | 0.47 | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | 4.5       |           | 1.9 | 0.55 | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | 3.9       |           | 1.9 | 0.24 | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| Perfluorooctanoic acid (PFOA)                            | 39        |           | 1.9 | 0.81 | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND        |           | 1.9 | 0.26 | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND        |           | 1.9 | 0.30 | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND        |           | 1.9 | 1.0  | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND        |           | 1.9 | 0.52 | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND        |           | 1.9 | 1.2  | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND        |           | 1.9 | 0.70 | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | 2.2       |           | 1.9 | 0.19 | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | 3.5       |           | 1.9 | 0.54 | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 0.32      | J         | 1.9 | 0.18 | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | 8.4       | I         | 1.9 | 0.51 | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND        |           | 1.9 | 0.30 | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND        |           | 1.9 | 0.93 | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND        |           | 4.8 | 1.1  | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND        |           | 4.8 | 1.2  | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| 6:2 FTS  | ND        |           | 4.8 | 2.4  | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| 8:2 FTS  | ND        |           | 1.9 | 0.44 | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>47</b> |           | 1.9 | 0.51 | ng/L |   | 12/06/21 05:28 | 12/06/21 22:51 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 105       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| 13C5 PFPeA       | 103       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| 13C2 PFHxA       | 99        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| 13C4 PFHpA       | 101       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| 13C4 PFOA        | 102       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| 13C5 PFNA        | 108       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| 13C2 PFDA        | 98        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| 13C2 PFUnA       | 105       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| 13C2 PFDoA       | 106       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| 13C2 PFTeDA      | 101       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| 13C3 PFBS        | 105       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| 18O2 PFHxS       | 88        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| 13C4 PFOS        | 96        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| 13C8 FOSA        | 93        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| d3-NMeFOSAA      | 98        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| d5-NEtFOSAA      | 90        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| M2-6:2 FTS       | 81        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 22:51 | 1       |
| M2-8:2 FTS       | 87        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 22:51 | 1       |

Eurofins TestAmerica, Sacramento



# Client Sample Results

Client: Katahdin Analytical Services  
 Project/Site: PFAS, Maine Commercial Water

Job ID: 320-82303-1

**Client Sample ID: 52-66-BLK**

**Lab Sample ID: 320-82303-2**

**Date Collected: 11/24/21 10:20**

**Matrix: Water**

**Date Received: 11/30/21 11:00**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND     |           | 4.7 | 2.3  | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND     |           | 1.9 | 0.46 | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND     |           | 1.9 | 0.55 | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | ND     |           | 1.9 | 0.24 | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| Perfluorooctanoic acid (PFOA)                            | ND     |           | 1.9 | 0.80 | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND     |           | 1.9 | 0.26 | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND     |           | 1.9 | 0.29 | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND     |           | 1.9 | 1.0  | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND     |           | 1.9 | 0.52 | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND     |           | 1.9 | 1.2  | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND     |           | 1.9 | 0.69 | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | ND     |           | 1.9 | 0.19 | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | ND     |           | 1.9 | 0.54 | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND     |           | 1.9 | 0.18 | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | ND     |           | 1.9 | 0.51 | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND     |           | 1.9 | 0.30 | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND     |           | 1.9 | 0.93 | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND     |           | 4.7 | 1.1  | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND     |           | 4.7 | 1.2  | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| 6:2 FTS  | ND     |           | 4.7 | 2.4  | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| 8:2 FTS  | ND     |           | 1.9 | 0.44 | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| Total PFOA and PFOS                                      | ND     |           | 1.9 | 0.51 | ng/L |   | 12/06/21 05:28 | 12/06/21 23:01 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 106       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| 13C5 PFPeA       | 103       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| 13C2 PFHxA       | 106       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| 13C4 PFHpA       | 101       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| 13C4 PFOA        | 114       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| 13C5 PFNA        | 111       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| 13C2 PFDA        | 104       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| 13C2 PFUnA       | 104       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| 13C2 PFDoA       | 109       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| 13C2 PFTeDA      | 102       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| 13C3 PFBS        | 108       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| 18O2 PFHxS       | 92        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| 13C4 PFOS        | 102       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| 13C8 FOSA        | 99        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| d3-NMeFOSAA      | 103       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| d5-NEtFOSAA      | 101       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| M2-6:2 FTS       | 89        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 23:01 | 1       |
| M2-8:2 FTS       | 85        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 23:01 | 1       |

Eurofins TestAmerica, Sacramento

# Isotope Dilution Summary

Client: Katahdin Analytical Services  
 Project/Site: PFAS, Maine Commercial Water

Job ID: 320-82303-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

|                     |                        | Percent Isotope Dilution Recovery (Acceptance Limits) |                   |                   |                    |                  |                  |                  |                   |
|---------------------|------------------------|---|-------------------|-------------------|--------------------|------------------|------------------|------------------|-------------------|
| Lab Sample ID       | Client Sample ID       | PFBA<br>(25-150)                                      | PFPeA<br>(25-150) | PFHxA<br>(25-150) | C4PFHA<br>(25-150) | PFOA<br>(25-150) | PFNA<br>(25-150) | PFDA<br>(25-150) | PFUnA<br>(25-150) |
| 320-82303-1         | 52-66                  | 105   | 103               | 99                | 101                | 102              | 108              | 98               | 105               |
| 320-82303-2         | 52-66-BLK              | 106   | 103               | 106               | 101                | 114              | 111              | 104              | 104               |
| LCS 320-548362/2-A  | Lab Control Sample     | 101   | 96                | 95                | 100                | 104              | 106              | 97               | 90                |
| LCSD 320-548362/3-A | Lab Control Sample Dup | 96  | 102               | 94                | 101                | 102              | 106              | 95               | 88                |
| MB 320-548362/1-A   | Method Blank           | 99  | 99                | 97                | 100                | 110              | 101              | 104              | 93                |

|                     |                        | Percent Isotope Dilution Recovery (Acceptance Limits) |                   |                    |                   |                  |                   |                     |                     |
|---------------------|------------------------|---|-------------------|--------------------|-------------------|------------------|-------------------|---------------------|---------------------|
| Lab Sample ID       | Client Sample ID       | PFDoA<br>(25-150)                                     | PFTDA<br>(25-150) | C3PFBS<br>(25-150) | PFHxS<br>(25-150) | PFOS<br>(25-150) | PFOSA<br>(25-150) | d3NMFOS<br>(25-150) | d5NEFOS<br>(25-150) |
| 320-82303-1         | 52-66                  | 106   | 101               | 105                | 88                | 96               | 93                | 98                  | 90                  |
| 320-82303-2         | 52-66-BLK              | 109   | 102               | 108                | 92                | 102              | 99                | 103                 | 101                 |
| LCS 320-548362/2-A  | Lab Control Sample     | 97  | 96                | 98                 | 86                | 95               | 88                | 89                  | 89                  |
| LCSD 320-548362/3-A | Lab Control Sample Dup | 98  | 91                | 96                 | 80                | 92               | 87                | 87                  | 91                  |
| MB 320-548362/1-A   | Method Blank           | 103   | 97                | 101                | 91                | 96               | 87                | 92                  | 90                  |

|                     |                        | Percent Isotope Dilution Recovery (Acceptance Limits) |                     |
|---------------------|------------------------|---|---------------------|
| Lab Sample ID       | Client Sample ID       | M262FTS<br>(25-150)                                   | M282FTS<br>(25-150) |
| 320-82303-1         | 52-66                  | 81  | 87                  |
| 320-82303-2         | 52-66-BLK              | 89  | 85                  |
| LCS 320-548362/2-A  | Lab Control Sample     | 90  | 89                  |
| LCSD 320-548362/3-A | Lab Control Sample Dup | 81  | 81                  |
| MB 320-548362/1-A   | Method Blank           | 92  | 88                  |

### Surrogate Legend

- PFBA = 13C4 PFBA
- PFPeA = 13C5 PFPeA
- PFHxA = 13C2 PFHxA
- C4PFHA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFUnA = 13C2 PFUnA
- PFDoA = 13C2 PFDoA
- PFTDA = 13C2 PFTeDA
- C3PFBS = 13C3 PFBS
- PFHxS = 18O2 PFHxS
- PFOS = 13C4 PFOS
- PFOSA = 13C8 FOSA
- d3NMFOS = d3-NMeFOSAA
- d5NEFOS = d5-NEtFOSAA
- M262FTS = M2-6:2 FTS
- M282FTS = M2-8:2 FTS

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Katahdin Analytical Services  
 Project/Site: PFAS, Maine Commercial Water

Job ID: 320-82303-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

**Lab Sample ID: MB 320-548362/1-A**  
**Matrix: Water**  
**Analysis Batch: 548579**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 548362**

| Analyte  | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|  | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluorobutanoic acid (PFBA)                            | ND     |           | 5.0 | 2.4  | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND     |           | 2.0 | 0.49 | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND     |           | 2.0 | 0.58 | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | ND     |           | 2.0 | 0.25 | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| Perfluorooctanoic acid (PFOA)                            | ND     |           | 2.0 | 0.85 | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND     |           | 2.0 | 0.27 | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND     |           | 2.0 | 0.31 | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND     |           | 2.0 | 1.1  | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND     |           | 2.0 | 0.55 | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND     |           | 2.0 | 1.3  | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND     |           | 2.0 | 0.73 | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | ND     |           | 2.0 | 0.20 | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | ND     |           | 2.0 | 0.57 | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND     |           | 2.0 | 0.19 | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | ND     |           | 2.0 | 0.54 | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND     |           | 2.0 | 0.32 | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND     |           | 2.0 | 0.98 | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND     |           | 5.0 | 1.2  | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND     |           | 5.0 | 1.3  | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| 6:2 FTS  | ND     |           | 5.0 | 2.5  | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| 8:2 FTS  | ND     |           | 2.0 | 0.46 | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| Total PFOA and PFOS                                      | ND     |           | 2.0 | 0.54 | ng/L |   | 12/06/21 05:28 | 12/06/21 20:09 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFBA        | 99        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| 13C5 PFPeA       | 99        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| 13C2 PFHxA       | 97        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| 13C4 PFHpA       | 100       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| 13C4 PFOA        | 110       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| 13C5 PFNA        | 101       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| 13C2 PFDA        | 104       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| 13C2 PFUnA       | 93        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| 13C2 PFDoA       | 103       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| 13C2 PFTeDA      | 97        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| 13C3 PFBS        | 101       |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| 18O2 PFHxS       | 91        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| 13C4 PFOS        | 96        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| 13C8 FOSA        | 87        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| d3-NMeFOSAA      | 92        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| d5-NEtFOSAA      | 90        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| M2-6:2 FTS       | 92        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 20:09 | 1       |
| M2-8:2 FTS       | 88        |           | 25 - 150 | 12/06/21 05:28 | 12/06/21 20:09 | 1       |

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Katahdin Analytical Services  
 Project/Site: PFAS, Maine Commercial Water

Job ID: 320-82303-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-548362/2-A**  
**Matrix: Water**  
**Analysis Batch: 548579**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 548362**

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|--|-------------|------------|---------------|------|---|------|--------------|
| Perfluorobutanoic acid (PFBA)                            | 40.0        | 38.0       |               | ng/L |   | 95   | 76 - 136     |
| Perfluoropentanoic acid (PFPeA)                          | 40.0        | 39.1       |               | ng/L |   | 98   | 71 - 131     |
| Perfluorohexanoic acid (PFHxA)                           | 40.0        | 37.3       |               | ng/L |   | 93   | 73 - 133     |
| Perfluoroheptanoic acid (PFHpA)                          | 40.0        | 36.3       |               | ng/L |   | 91   | 72 - 132     |
| Perfluorooctanoic acid (PFOA)                            | 40.0        | 36.3       |               | ng/L |   | 91   | 70 - 130     |
| Perfluorononanoic acid (PFNA)                            | 40.0        | 35.5       |               | ng/L |   | 89   | 75 - 135     |
| Perfluorodecanoic acid (PFDA)                            | 40.0        | 37.5       |               | ng/L |   | 94   | 76 - 136     |
| Perfluoroundecanoic acid (PFUnA)                         | 40.0        | 40.2       |               | ng/L |   | 100  | 68 - 128     |
| Perfluorododecanoic acid (PFDoA)                         | 40.0        | 38.5       |               | ng/L |   | 96   | 71 - 131     |
| Perfluorotridecanoic acid (PFTriA)                       | 40.0        | 37.0       |               | ng/L |   | 93   | 71 - 131     |
| Perfluorotetradecanoic acid (PFTeA)                      | 40.0        | 36.6       |               | ng/L |   | 91   | 70 - 130     |
| Perfluorobutanesulfonic acid (PFBS)                      | 35.4        | 31.0       |               | ng/L |   | 88   | 67 - 127     |
| Perfluorohexanesulfonic acid (PFHxS)                     | 36.4        | 35.0       |               | ng/L |   | 96   | 59 - 119     |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 38.1        | 34.0       |               | ng/L |   | 89   | 76 - 136     |
| Perfluorooctanesulfonic acid (PFOS)                      | 37.1        | 33.8       |               | ng/L |   | 91   | 70 - 130     |
| Perfluorodecanesulfonic acid (PFDS)                      | 38.6        | 34.1       |               | ng/L |   | 89   | 71 - 131     |
| Perfluorooctanesulfonamide (FOSA)                        | 40.0        | 39.9       |               | ng/L |   | 100  | 73 - 133     |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 40.0        | 38.9       |               | ng/L |   | 97   | 76 - 136     |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | 40.0        | 37.4       |               | ng/L |   | 94   | 76 - 136     |
| 6:2 FTS  | 37.9        | 34.9       |               | ng/L |   | 92   | 59 - 175     |
| 8:2 FTS  | 38.3        | 32.3       |               | ng/L |   | 84   | 75 - 135     |

| Isotope Dilution | LCS LCS   |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFBA        | 101       |           | 25 - 150 |
| 13C5 PFPeA       | 96        |           | 25 - 150 |
| 13C2 PFHxA       | 95        |           | 25 - 150 |
| 13C4 PFHpA       | 100       |           | 25 - 150 |
| 13C4 PFOA        | 104       |           | 25 - 150 |
| 13C5 PFNA        | 106       |           | 25 - 150 |
| 13C2 PFDA        | 97        |           | 25 - 150 |
| 13C2 PFUnA       | 90        |           | 25 - 150 |
| 13C2 PFDoA       | 97        |           | 25 - 150 |
| 13C2 PFTeDA      | 96        |           | 25 - 150 |
| 13C3 PFBS        | 98        |           | 25 - 150 |
| 18O2 PFHxS       | 86        |           | 25 - 150 |
| 13C4 PFOS        | 95        |           | 25 - 150 |
| 13C8 FOSA        | 88        |           | 25 - 150 |
| d3-NMeFOSAA      | 89        |           | 25 - 150 |
| d5-NEtFOSAA      | 89        |           | 25 - 150 |

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Katahdin Analytical Services  
 Project/Site: PFAS, Maine Commercial Water

Job ID: 320-82303-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-548362/2-A**  
**Matrix: Water**  
**Analysis Batch: 548579**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 548362**

| Isotope Dilution | LCS LCS   |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| M2-6:2 FTS       | 90        |           | 25 - 150 |
| M2-8:2 FTS       | 89        |           | 25 - 150 |

**Lab Sample ID: LCSD 320-548362/3-A**  
**Matrix: Water**  
**Analysis Batch: 548579**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 548362**

| Analyte  | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|--|-------------|-------------|----------------|------|---|------|--------------|-----|-----------|
|  |             |             |                |      |   |      |              |     |           |
| Perfluoropentanoic acid (PFPeA)                          | 40.0        | 35.1        |                | ng/L |   | 88   | 71 - 131     | 11  | 30        |
| Perfluorohexanoic acid (PFHxA)                           | 40.0        | 36.3        |                | ng/L |   | 91   | 73 - 133     | 3   | 30        |
| Perfluoroheptanoic acid (PFHpA)                          | 40.0        | 36.7        |                | ng/L |   | 92   | 72 - 132     | 1   | 30        |
| Perfluorooctanoic acid (PFOA)                            | 40.0        | 36.9        |                | ng/L |   | 92   | 70 - 130     | 2   | 30        |
| Perfluorononanoic acid (PFNA)                            | 40.0        | 34.9        |                | ng/L |   | 87   | 75 - 135     | 2   | 30        |
| Perfluorodecanoic acid (PFDA)                            | 40.0        | 35.1        |                | ng/L |   | 88   | 76 - 136     | 7   | 30        |
| Perfluoroundecanoic acid (PFUnA)                         | 40.0        | 41.2        |                | ng/L |   | 103  | 68 - 128     | 3   | 30        |
| Perfluorododecanoic acid (PFDoA)                         | 40.0        | 39.0        |                | ng/L |   | 98   | 71 - 131     | 1   | 30        |
| Perfluorotridecanoic acid (PFTriA)                       | 40.0        | 37.8        |                | ng/L |   | 95   | 71 - 131     | 2   | 30        |
| Perfluorotetradecanoic acid (PFTeA)                      | 40.0        | 37.6        |                | ng/L |   | 94   | 70 - 130     | 3   | 30        |
| Perfluorobutanesulfonic acid (PFBS)                      | 35.4        | 32.6        |                | ng/L |   | 92   | 67 - 127     | 5   | 30        |
| Perfluorohexanesulfonic acid (PFHxS)                     | 36.4        | 34.1        |                | ng/L |   | 94   | 59 - 119     | 2   | 30        |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 38.1        | 32.6        |                | ng/L |   | 86   | 76 - 136     | 4   | 30        |
| Perfluorooctanesulfonic acid (PFOS)                      | 37.1        | 31.9        |                | ng/L |   | 86   | 70 - 130     | 6   | 30        |
| Perfluorodecanesulfonic acid (PFDS)                      | 38.6        | 36.4        |                | ng/L |   | 95   | 71 - 131     | 7   | 30        |
| Perfluorooctanesulfonamide (FOSA)                        | 40.0        | 39.8        |                | ng/L |   | 100  | 73 - 133     | 0   | 30        |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 40.0        | 38.8        |                | ng/L |   | 97   | 76 - 136     | 0   | 30        |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | 40.0        | 36.6        |                | ng/L |   | 91   | 76 - 136     | 2   | 30        |
| 6:2 FTS  | 37.9        | 33.3        |                | ng/L |   | 88   | 59 - 175     | 5   | 30        |
| 8:2 FTS  | 38.3        | 35.4        |                | ng/L |   | 92   | 75 - 135     | 9   | 30        |

| Isotope Dilution | LCSD LCSD |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFBA        | 96        |           | 25 - 150 |
| 13C5 PFPeA       | 102       |           | 25 - 150 |
| 13C2 PFHxA       | 94        |           | 25 - 150 |
| 13C4 PFHpA       | 101       |           | 25 - 150 |
| 13C4 PFOA        | 102       |           | 25 - 150 |
| 13C5 PFNA        | 106       |           | 25 - 150 |
| 13C2 PFDA        | 95        |           | 25 - 150 |
| 13C2 PFUnA       | 88        |           | 25 - 150 |
| 13C2 PFDoA       | 98        |           | 25 - 150 |

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Katahdin Analytical Services  
Project/Site: PFAS, Maine Commercial Water

Job ID: 320-82303-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-548362/3-A

Matrix: Water

Analysis Batch: 548579

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 548362

| <i>Isotope Dilution</i> | <i>LCSD LCSD</i> |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| <i>13C2 PFTeDA</i>      | 91               |                  | 25 - 150      |
| <i>13C3 PFBS</i>        | 96               |                  | 25 - 150      |
| <i>18O2 PFHxS</i>       | 80               |                  | 25 - 150      |
| <i>13C4 PFOS</i>        | 92               |                  | 25 - 150      |
| <i>13C8 FOSA</i>        | 87               |                  | 25 - 150      |
| <i>d3-NMeFOSAA</i>      | 87               |                  | 25 - 150      |
| <i>d5-NEtFOSAA</i>      | 91               |                  | 25 - 150      |
| <i>M2-6:2 FTS</i>       | 81               |                  | 25 - 150      |
| <i>M2-8:2 FTS</i>       | 81               |                  | 25 - 150      |

# QC Association Summary

Client: Katahdin Analytical Services  
Project/Site: PFAS, Maine Commercial Water

Job ID: 320-82303-1

## LCMS

### Prep Batch: 548362

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 320-82303-1         | 52-66                  | Total/NA  | Water  | 3535   |            |
| 320-82303-2         | 52-66-BLK              | Total/NA  | Water  | 3535   |            |
| MB 320-548362/1-A   | Method Blank           | Total/NA  | Water  | 3535   |            |
| LCS 320-548362/2-A  | Lab Control Sample     | Total/NA  | Water  | 3535   |            |
| LCSD 320-548362/3-A | Lab Control Sample Dup | Total/NA  | Water  | 3535   |            |

### Analysis Batch: 548579

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method         | Prep Batch |
|---------------------|------------------------|-----------|--------|----------------|------------|
| 320-82303-1         | 52-66                  | Total/NA  | Water  | 537 (modified) | 548362     |
| 320-82303-2         | 52-66-BLK              | Total/NA  | Water  | 537 (modified) | 548362     |
| MB 320-548362/1-A   | Method Blank           | Total/NA  | Water  | 537 (modified) | 548362     |
| LCS 320-548362/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 (modified) | 548362     |
| LCSD 320-548362/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 (modified) | 548362     |

# Lab Chronicle

Client: Katahdin Analytical Services  
Project/Site: PFAS, Maine Commercial Water

Job ID: 320-82303-1

**Client Sample ID: 52-66**

**Date Collected: 11/24/21 10:15**

**Date Received: 11/30/21 11:00**

**Lab Sample ID: 320-82303-1**

**Matrix: Water**

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 262.4 mL       | 10.0 mL      | 548362       | 12/06/21 05:28       | NSS     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 548579       | 12/06/21 22:51       | RS1     | TAL SAC |

**Client Sample ID: 52-66-BLK**

**Date Collected: 11/24/21 10:20**

**Date Received: 11/30/21 11:00**

**Lab Sample ID: 320-82303-2**

**Matrix: Water**

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 264.2 mL       | 10.0 mL      | 548362       | 12/06/21 05:28       | NSS     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 548579       | 12/06/21 23:01       | RS1     | TAL SAC |

**Laboratory References:**

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# Accreditation/Certification Summary

Client: Katahdin Analytical Services  
 Project/Site: PFAS, Maine Commercial Water

Job ID: 320-82303-1

## Laboratory: Eurofins TestAmerica, Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program               | Identification Number | Expiration Date |
|-----------|-----------------------|-----------------------|-----------------|
| ANAB      | Dept. of Defense ELAP | L2468                 | 01-20-24        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix  | Analyte  |
|-----------------|-------------|---------|--|
| 537 (modified)  | 3535        | Water   | 6:2 FTS  |
| 537 (modified)  | 3535        | Water   | 8:2 FTS  |
| 537 (modified)  | 3535        | Water   | N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  |
| 537 (modified)  | 3535        | Water   | N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) |
| 537 (modified)  | 3535        | Water   | Perfluorobutanesulfonic acid (PFBS)                      |
| 537 (modified)  | 3535        | Water   | Perfluorobutanoic acid (PFBA)                            |
| 537 (modified)  | 3535        | Water   | Perfluorodecanesulfonic acid (PFDS)                      |
| 537 (modified)  | 3535        | Water   | Perfluorodecanoic acid (PFDA)                            |
| 537 (modified)  | 3535        | Water   | Perfluorododecanoic acid (PFDoA)                         |
| 537 (modified)  | 3535        | Water   | Perfluoroheptanesulfonic Acid (PFHpS)                    |
| 537 (modified)  | 3535        | Water   | Perfluoroheptanoic acid (PFHpA)                          |
| 537 (modified)  | 3535        | Water   | Perfluorohexanesulfonic acid (PFHxS)                     |
| 537 (modified)  | 3535        | Water   | Perfluorohexanoic acid (PFHxA)                           |
| 537 (modified)  | 3535        | Water   | Perfluorononanoic acid (PFNA)                            |
| 537 (modified)  | 3535        | Water   | Perfluorooctanesulfonamide (FOSA)                        |
| 537 (modified)  | 3535        | Water   | Perfluorooctanesulfonic acid (PFOS)                      |
| 537 (modified)  | 3535        | Water   | Perfluorooctanoic acid (PFOA)                            |
| 537 (modified)  | 3535        | Water   | Perfluoropentanoic acid (PFPeA)                          |
| 537 (modified)  | 3535        | Water   | Perfluorotetradecanoic acid (PFTeA)                      |
| 537 (modified)  | 3535        | Water   | Perfluorotridecanoic acid (PFTriA)                       |
| 537 (modified)  | 3535        | Water   | Perfluoroundecanoic acid (PFUnA)                         |
| 537 (modified)  | 3535        | Water   | Total PFOA and PFOS                                      |
| Maine           | State       | CA00004 | 04-14-22   |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte  |
|-----------------|-------------|--------|--|
| 537 (modified)  | 3535        | Water  | 6:2 FTS  |
| 537 (modified)  | 3535        | Water  | 8:2 FTS  |
| 537 (modified)  | 3535        | Water  | N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  |
| 537 (modified)  | 3535        | Water  | N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) |
| 537 (modified)  | 3535        | Water  | Perfluorobutanesulfonic acid (PFBS)                      |
| 537 (modified)  | 3535        | Water  | Perfluorobutanoic acid (PFBA)                            |
| 537 (modified)  | 3535        | Water  | Perfluorodecanesulfonic acid (PFDS)                      |
| 537 (modified)  | 3535        | Water  | Perfluorodecanoic acid (PFDA)                            |
| 537 (modified)  | 3535        | Water  | Perfluorododecanoic acid (PFDoA)                         |
| 537 (modified)  | 3535        | Water  | Perfluoroheptanesulfonic Acid (PFHpS)                    |
| 537 (modified)  | 3535        | Water  | Perfluoroheptanoic acid (PFHpA)                          |
| 537 (modified)  | 3535        | Water  | Perfluorohexanesulfonic acid (PFHxS)                     |
| 537 (modified)  | 3535        | Water  | Perfluorohexanoic acid (PFHxA)                           |
| 537 (modified)  | 3535        | Water  | Perfluorononanoic acid (PFNA)                            |
| 537 (modified)  | 3535        | Water  | Perfluorooctanesulfonamide (FOSA)                        |
| 537 (modified)  | 3535        | Water  | Perfluorooctanesulfonic acid (PFOS)                      |

Eurofins TestAmerica, Sacramento

# Accreditation/Certification Summary

Client: Katahdin Analytical Services  
Project/Site: PFAS, Maine Commercial Water

Job ID: 320-82303-1

## Laboratory: Eurofins TestAmerica, Sacramento (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
|-----------|---------|-----------------------|-----------------|

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                             |
|-----------------|-------------|--------|-------------------------------------|
| 537 (modified)  | 3535        | Water  | Perfluorooctanoic acid (PFOA)       |
| 537 (modified)  | 3535        | Water  | Perfluoropentanoic acid (PFPeA)     |
| 537 (modified)  | 3535        | Water  | Perfluorotetradecanoic acid (PFTeA) |
| 537 (modified)  | 3535        | Water  | Perfluorotridecanoic acid (PFTriA)  |
| 537 (modified)  | 3535        | Water  | Perfluoroundecanoic acid (PFUnA)    |
| 537 (modified)  | 3535        | Water  | Total PFOA and PFOS                 |



# Method Summary

Client: Katahdin Analytical Services  
Project/Site: PFAS, Maine Commercial Water

Job ID: 320-82303-1

| Method         | Method Description           | Protocol | Laboratory |
|----------------|------------------------------|----------|------------|
| 537 (modified) | Fluorinated Alkyl Substances | EPA      | TAL SAC    |
| 3535           | Solid-Phase Extraction (SPE) | SW846    | TAL SAC    |

**Protocol References:**

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# Sample Summary

Client: Katahdin Analytical Services  
Project/Site: PFAS, Maine Commercial Water

Job ID: 320-82303-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 320-82303-1   | 52-66            | Water  | 11/24/21 10:15 | 11/30/21 11:00 |
| 320-82303-2   | 52-66-BLK        | Water  | 11/24/21 10:20 | 11/30/21 11:00 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

|  |  |                                     |                |  |              |                      |   |                                   |                                   |
|--|--|-------------------------------------|----------------|--|--------------|----------------------|---|-----------------------------------|-----------------------------------|
| <b>Client:</b><br>Katahdin Analytical Services                             |  | <b>Contact:</b><br>Ms. Heather Manz |                | <b>Email:</b><br>hmanz@katahdinlab.com                         |              |                      | <b>Phone #:</b><br>(207) 874-2400         |                                   |                                   |
| <b>Address:</b><br>600 Technology Way                                      |  | <b>City:</b><br>Scarborough         |                | <b>State:</b><br>Maine   |              | <b>Zip:</b><br>04074 |   | <b>Project Name:</b><br>S08222    |                                   |
| <b>KAS WO #:</b><br>S08222   |  | <b>Quote #:</b>                     |                | <b>Purchase Order #:</b>                                       |              |                      | <b>TAT:</b>                               |                                   |                                   |
| <b>RPT Level:</b><br>II  |  | <b>Reporting Format:</b>            |                | <b>EDD:</b>  |              |                      | <b>Verbal TAT:</b>                        |                                   |                                   |
| <b>Sample ID:</b>  |  | <b>Collect Date/Time:</b>           | <b>Matrix:</b> | <b>No. of Containers</b>                                       | <b>Pres.</b> | <b>MS/MSD Dup.</b>   | <b>Analysis:</b><br>PFAS<br>Filtered? Y/N | <b>Analysis:</b><br>Filtered? Y/N | <b>Analysis:</b><br>Filtered? Y/N |
| 52-66  |  | 24-NOV-21 10:15                     | AQ             | 2  | N/A          | NO                   | ✓   |                                   |                                   |
| <b>Relinquished By:</b><br><i>[Signature]</i>                              |  | <b>Date/Time:</b><br>11-29-21/14:30 |                | <b>Received By:</b><br><i>[Signature]</i> EEASac 11-30-21 1100 |              |                      |   |                                   |                                   |
| <b>Comments:</b><br><br>S2-66- BLK      11/24/21 @ 10:20 : Blank (ON Hold) |  |                                     |                |  |              |                      |   |                                   |                                   |

*1.80c*



320-82303 Chain of Custody

# Login Sample Receipt Checklist

Client: Katahdin Analytical Services

Job Number: 320-82303-1

**Login Number: 82303**

**List Source: Eurofins TestAmerica, Sacramento**

**List Number: 1**

**Creator: Oropeza, Salvador**

| Question   | Answer | Comment                       |
|--|--------|-------------------------------|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | True   |                               |
| The cooler's custody seal, if present, is intact.                                | True   | seal                          |
| Sample custody seals, if present, are intact.                                    | N/A    |                               |
| The cooler or samples do not appear to have been compromised or tampered with.   | True   |                               |
| Samples were received on ice.  | True   |                               |
| Cooler Temperature is acceptable.  | True   |                               |
| Cooler Temperature is recorded.  | True   |                               |
| COC is present.  | True   |                               |
| COC is filled out in ink and legible.  | True   |                               |
| COC is filled out with all pertinent information.                                | True   |                               |
| Is the Field Sampler's name present on COC?                                      | False  | Not requested on COC.         |
| There are no discrepancies between the containers received and the COC.          | True   |                               |
| Samples are received within Holding Time (excluding tests with immediate HTs)    | True   |                               |
| Sample containers have legible labels.   | True   |                               |
| Containers are not broken or leaking.  | True   |                               |
| Sample collection date/times are provided.                                       | True   |                               |
| Appropriate sample containers are used.  | False  | Improper containers received. |
| Sample bottles are completely filled.  | True   |                               |
| Sample Preservation Verified.  | N/A    |                               |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True   |                               |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").  | True   |                               |
| Multiphasic samples are not present.   | True   |                               |
| Samples do not require splitting or compositing.                                 | True   |                               |
| Residual Chlorine Checked.   | N/A    |                               |



**Katahdin Analytical Services, LLC.**

**Sample Receipt Condition Report**

|  |                              |                                      |
|--|------------------------------|--------------------------------------|
| Client: <i>Wood</i>                    | KAS PM: <i>HMM</i>           | Sampled By: <i>Client</i>            |
| Project:                               | KIMS Entry By: <i>GN</i>     | Delivered By: <i>Client</i>          |
| KAS Work Order#: <i>SO 8222/508223</i> | KIMS Review By: <i>HMM</i>   | Received By: <i>GN</i>               |
|  | Labeled By: <i>GN</i>        |                                      |
| SDG #:                                 | Cooler: <u>1</u> of <u>1</u> | Date/Time Rec.: <i>11/24/21 1353</i> |

| Receipt Criteria  | Y        | N | EX* | NA | Comments and/or Resolution  |
|---|----------|---|-----|----|---|
| 1. Custody seals present / intact?  |          | / |     |    |   |
| 2. Chain of Custody present in cooler?  | /        |   |     |    |   |
| 3. Chain of Custody signed by client?   | /        |   |     |    |   |
| 4. Chain of Custody matches samples?  | /        |   |     |    |   |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.  | /        |   |     |    | Temp (°C): <i>1.4</i><br>Thermometer ID: IR-1   |
| Samples received at <6 °C w/o freezing?   | /        |   |     |    | Note: Not required for metals (except Hg soil) analysis.  |
| Ice packs or ice present?   | /        |   |     |    | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements?  | /        |   |     |    |   |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?   |          |   |     | /  | Note: No cooling process required for metals (except Hg soil) analysis.   |
| 6. Volatiles:<br><b>Aqueous:</b> No bubble larger than a pea?<br><b>Soil/Sediment:</b><br>Received in airtight container?<br>Received in methanol?<br>Methanol covering soil?<br>D.I. Water - Received within 48 hour HT? |          |   |     | /  |   |
| 7. Trip Blank present in cooler?  |          |   |     | /  |   |
| 8. Proper sample containers and volume?   | /        |   |     |    |   |
| 9. Samples within hold time upon receipt?   | /        |   |     |    |   |
| 10. Aqueous samples properly preserved?<br>Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2<br>Sulfide - >9<br>Cyanide – pH >12   | <i>g</i> |   |     | /  |   |
| 11. Bottleware Prepped on:  |          |   |     |    |   |

\* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

**Katahdin Analytical Services, LLC.**

**Sample Receipt Condition Report**

|                                  |                              |                                      |
|----------------------------------|------------------------------|--------------------------------------|
| Client: <u>Wood</u>              | KAS PM: <u>APC HMM</u>       | Sampled By: <u>Client</u>            |
| Project:                         | KIMS Entry By: <u>GN</u>     | Delivered By: <u>Client</u>          |
| KAS Work Order#: <u>SO 8223/</u> | KIMS Review By: <u>HMM</u>   | Received By: <u>GN</u>               |
|                                  | Labeled By: <u>GN</u>        |                                      |
| SDG #:                           | Cooler: <u>1</u> of <u>1</u> | Date/Time Rec.: <u>11/24/21 1353</u> |

| Receipt Criteria  | Y                                   | N                                   | EX* | NA                                  | Comments and/or Resolution  |
|---|-------------------------------------|-------------------------------------|-----|-------------------------------------|---|
| 1. Custody seals present / intact?  |                                     | <input checked="" type="checkbox"/> |     |                                     |   |
| 2. Chain of Custody present in cooler?  | <input checked="" type="checkbox"/> |                                     |     |                                     |   |
| 3. Chain of Custody signed by client?   | <input checked="" type="checkbox"/> |                                     |     |                                     |   |
| 4. Chain of Custody matches samples?  | <input checked="" type="checkbox"/> |                                     |     |                                     |   |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.  | <input checked="" type="checkbox"/> |                                     |     |                                     | Temp (°C): <u>3.7</u><br>Thermometer ID: IR-1   |
| Samples received at <6 °C w/o freezing?   | <input checked="" type="checkbox"/> |                                     |     |                                     | Note: Not required for metals (except Hg soil) analysis.  |
| Ice packs or ice present?   | <input checked="" type="checkbox"/> |                                     |     |                                     | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements?  | <input checked="" type="checkbox"/> |                                     |     |                                     |   |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?   |                                     |                                     |     | <input checked="" type="checkbox"/> | Note: No cooling process required for metals (except Hg soil) analysis.   |
| 6. Volatiles:<br><b>Aqueous:</b> No bubble larger than a pea?<br><b>Soil/Sediment:</b><br>Received in airtight container?<br>Received in methanol?<br>Methanol covering soil?<br>D.I. Water - Received within 48 hour HT? | <input checked="" type="checkbox"/> |                                     |     |                                     |   |
| 7. Trip Blank present in cooler?  | <input checked="" type="checkbox"/> |                                     |     |                                     |   |
| 8. Proper sample containers and volume?   | <input checked="" type="checkbox"/> |                                     |     |                                     |   |
| 9. Samples within hold time upon receipt?   | <input checked="" type="checkbox"/> |                                     |     |                                     |   |
| 10. Aqueous samples properly preserved?<br>Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2<br>Sulfide - >9<br>Cyanide - pH >12   |                                     |                                     |     | <input checked="" type="checkbox"/> |   |

11. Bottleneck Prepped on:

\* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.







**Katahdin Analytical Services**  
**Login Chain of Custody Report (Ino1)**

Nov. 30, 2021

01:23 PM

Quote/Incoming: MCTXT

**Login Number: SO8222**

**Account:** WOODPLC001

Wood Environment & Infrastructure

**Project:** HARDINTEX001

Tex Tech

**Primary Report Address:**

Julie Ricardi  
Wood Environment & Infrastructure  
107 Black Point Road

New Gloucester, ME 04260

jricardi@maine.rr.com

**Primary Invoice Address:**

Wood Environment & Infrastructure  
1105 Lakewood Pkwy  
Suite 300  
Alpharetta, GA 30009-7625

APIInvoice@woodplc.com; also send cc to project site contact

**Report CC Addresses:**

**Invoice CC Addresses:**

**Login Information:**

ANALYSIS INSTRUCTIONS : PFAS sub to Eurofins West Sac. Last job number 320-55038. Not DOD.

CHECK NO. :

CLIENT PO# : C012505799; PN: 3611171208.05.01

CLIENT PROJECT MANAGE :

CONTRACT :

COOLER TEMPERATURE : 1.4, 3.7

DELIVERY SERVICES : Client

EDD FORMAT : KAS075-CSV & KAS064-XLS

LOGIN INITIALS : GN

PM : HHM

PROJECT NAME : Tex Tech

QC LEVEL : II

REPORT INSTRUCTIONS : Email report & EDD to Julie.Ricardi@woodplc.com & rebecca.brosnan@woodplc.com. Email invoices to APIInvoice.US@woodplc.com, Julie.Ricardi@woodplc.com & rebecca.brosnan@woodplc.com.

SDG ID :

SDG STATUS :

VERBAL TAT :

Nov. 30, 2021

01:23 PM

**Login Number: SO8222**

**Quote/Incoming: MCTXT**

**Account:** WOODPLC001

Wood Environment & Infrastructure

**Project:** HARDINTEX001

Tex Tech

| Laboratory Sample ID | Client Sample Number | Collect Date/Time           | Receive Date       | PR                  | Verbal Date                             | Due Date  | Mailed |
|----------------------|----------------------|-----------------------------|--------------------|---------------------|---|-----------|--------|
| SO8222-1             | 52-66                | 24-NOV-21 10:15             | 24-NOV-21          |                     |   | 15-DEC-21 |        |
| <i>Matrix</i>        | <i>Product</i>       | <i>Hold Date (shortest)</i> | <i>Bottle Type</i> | <i>Bottle Count</i> | <i>Comments</i>                         |           |        |
| Aqueous              | S PFOA-PFOS-SUB      |                             | 250mL Plastic      |                     |   |           |        |
| Service              | S REPORTING          |                             |                    |                     |   |           |        |
| Service              | S WASTE-DISPOSAL     |                             |                    |                     |   |           |        |
| SO8222-2             | 52-66-BLK            | 24-NOV-21 10:20             | 24-NOV-21          |                     |   | 15-DEC-21 |        |
| <i>Matrix</i>        | <i>Product</i>       | <i>Hold Date (shortest)</i> | <i>Bottle Type</i> | <i>Bottle Count</i> | <i>Comments</i>                         |           |        |
| Aqueous              | S PFOA-PFOS-SUB      |                             | 250mL Plastic      |                     | <b>Extract &amp; Hold for analysis.</b> |           |        |

**Total Samples: 2**

**Total Analyses: 4**

## ANALYTICAL REPORT

Eurofins Sacramento  
880 Riverside Parkway  
West Sacramento, CA 95605  
Tel: (916)373-5600


Laboratory Job ID: 320-85693-1

Client Project/Site: PFAS - Tex Tech, ME Site

**For:**

Wood E&I Solutions Inc  
511 Congress St. Suite 200  
Portland, Maine 04101

Attn: Ms. Julie Ricardi



*Authorized for release by:*

*3/25/2022 11:31:46 AM*

Nathaniel Horner, Project Management Assistant I  
(916)374-4306

[Nathaniel.Horner@Eurofinset.com](mailto:Nathaniel.Horner@Eurofinset.com)

Designee for

Jill Kellmann, Client Service Manager  
(916)374-4402

[Jill.Kellmann@Eurofinset.com](mailto:Jill.Kellmann@Eurofinset.com)

### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 2  |
| Definitions/Glossary . . . . .     | 3  |
| Case Narrative . . . . .           | 4  |
| Detection Summary . . . . .        | 5  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 13 |
| QC Sample Results . . . . .        | 15 |
| QC Association Summary . . . . .   | 19 |
| Lab Chronicle . . . . .            | 20 |
| Certification Summary . . . . .    | 21 |
| Method Summary . . . . .           | 22 |
| Sample Summary . . . . .           | 23 |
| Chain of Custody . . . . .         | 24 |
| Receipt Checklists . . . . .       | 26 |

# Definitions/Glossary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| I         | Value is EMPC (estimated maximum possible concentration).  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

---

## Job ID: 320-85693-1

---

### Laboratory: Eurofins Sacramento

#### Narrative

##### Receipt

The samples were received on 3/11/2022 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.0° C.

##### LCMS

Method 537 (modified): The transition mass ratio was outside of the established ratio limit for Perfluorododecanoic acid (PFDoA) in (CCVL 320-573488/2) associated to this data set. This is indicated by the "R" flag in the raw data. As the flagged data is in control in the low level continuing calibration verification (CCVL), there is no adverse impact to the data.

Method 537 (modified): The "I" qualifier means the transition mass ratio for Perfluoroheptanesulfonic acid (PFHpS) was below the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgment was used to positively identify the analyte. 52-77 (320-85693-2)

Method 537 (modified): The "I" qualifier means the transition mass ratio for Perfluorooctanesulfonic acid (PFOS) was above the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte. 52-77 (320-85693-2), DUP03 (320-85693-4) and 52-46 (320-85693-5)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

##### Organic Prep

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-573412.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

## Client Sample ID: 52-78

## Lab Sample ID: 320-85693-1

| Analyte   | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|---|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorobutanoic acid (PFBA)                           | 3.1    | J         | 4.5 | 2.2  | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoropentanoic acid (PFPeA)                         | 1.4    | J         | 1.8 | 0.44 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanoic acid (PFHxA)                          | 2.7    |           | 1.8 | 0.53 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)                         | 3.3    |           | 1.8 | 0.23 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)                           | 17     |           | 1.8 | 0.77 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)                     | 2.9    |           | 1.8 | 0.18 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS)                    | 1.5    | J         | 1.8 | 0.52 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)                     | 2.9    |           | 1.8 | 0.49 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)                       | 5.5    |           | 1.8 | 0.89 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA) | 1.4    | J         | 4.5 | 1.2  | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                                     | 20     |           | 1.8 | 0.49 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 52-77

## Lab Sample ID: 320-85693-2

| Analyte                               | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|---------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorobutanoic acid (PFBA)         | 2.4    | J         | 4.5 | 2.2  | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoropentanoic acid (PFPeA)       | 1.3    | J         | 1.8 | 0.44 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanoic acid (PFHxA)        | 4.8    |           | 1.8 | 0.52 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)       | 4.3    |           | 1.8 | 0.22 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)         | 25     |           | 1.8 | 0.76 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)   | 6.1    |           | 1.8 | 0.18 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS)  | 2.5    |           | 1.8 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanesulfonic Acid (PFHpS) | 0.19   | J I       | 1.8 | 0.17 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)   | 4.1    | I         | 1.8 | 0.48 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)     | 2.6    |           | 1.8 | 0.88 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                   | 29     |           | 1.8 | 0.48 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 40-15

## Lab Sample ID: 320-85693-3

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorooctanoic acid (PFOA)        | 3.6    |           | 1.9 | 0.80 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)  | 2.2    |           | 1.9 | 0.19 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 2.1    |           | 1.9 | 0.54 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 2.6    |           | 1.9 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)    | 3.6    |           | 1.9 | 0.92 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                  | 6.2    |           | 1.9 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: DUP03

## Lab Sample ID: 320-85693-4

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluoropentanoic acid (PFPeA)      | 1.6    | J         | 1.8 | 0.45 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanoic acid (PFHxA)       | 5.0    |           | 1.8 | 0.53 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)      | 4.1    |           | 1.8 | 0.23 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 21     |           | 1.8 | 0.77 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)  | 5.8    |           | 1.8 | 0.18 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 2.3    |           | 1.8 | 0.52 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 4.0    | I         | 1.8 | 0.49 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)    | 2.3    |           | 1.8 | 0.89 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                  | 25     |           | 1.8 | 0.49 | ng/L | 1       |   | 537 (modified) | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Sacramento



# Detection Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

## Client Sample ID: 52-46

## Lab Sample ID: 320-85693-5

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorohexanoic acid (PFHxA)       | 1.7    | J         | 1.9 | 0.55 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)      | 3.3    |           | 1.9 | 0.24 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 29     |           | 1.9 | 0.81 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)  | 3.0    |           | 1.9 | 0.19 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 3.9    |           | 1.9 | 0.54 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 2.6    | I         | 1.9 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)    | 5.3    |           | 1.9 | 0.93 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                  | 32     |           | 1.9 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: W-2

## Lab Sample ID: 320-85693-6

| Analyte   | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|---|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorobutanoic acid (PFBA)                           | 11     |           | 4.5 | 2.2  | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoropentanoic acid (PFPeA)                         | 18     |           | 1.8 | 0.44 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanoic acid (PFHxA)                          | 40     |           | 1.8 | 0.52 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)                         | 42     |           | 1.8 | 0.23 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)                           | 250    |           | 1.8 | 0.77 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorononanoic acid (PFNA)                           | 7.7    |           | 1.8 | 0.24 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorodecanoic acid (PFDA)                           | 7.2    |           | 1.8 | 0.28 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroundecanoic acid (PFUnA)                        | 1.4    | J         | 1.8 | 1.0  | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)                     | 4.9    |           | 1.8 | 0.18 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS)                    | 12     |           | 1.8 | 0.52 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanesulfonic Acid (PFHpS)                   | 2.8    |           | 1.8 | 0.17 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)                     | 180    |           | 1.8 | 0.49 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)                       | 9.7    |           | 1.8 | 0.89 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA) | 15     |           | 4.5 | 1.2  | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                                     | 430    |           | 1.8 | 0.49 | ng/L | 1       |   | 537 (modified) | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

**Client Sample ID: 52-78**  
**Date Collected: 03/10/22 09:40**  
**Date Received: 03/11/22 09:50**

**Lab Sample ID: 320-85693-1**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result    | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|-----------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | 3.1       | J         | 4.5 | 2.2  | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | 1.4       | J         | 1.8 | 0.44 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | 2.7       |           | 1.8 | 0.53 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | 3.3       |           | 1.8 | 0.23 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| Perfluorooctanoic acid (PFOA)                            | 17        |           | 1.8 | 0.77 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND        |           | 1.8 | 0.24 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND        |           | 1.8 | 0.28 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND        |           | 1.8 | 1.0  | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND        |           | 1.8 | 0.50 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND        |           | 1.8 | 1.2  | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND        |           | 1.8 | 0.66 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | 2.9       |           | 1.8 | 0.18 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | 1.5       | J         | 1.8 | 0.52 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND        |           | 1.8 | 0.17 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | 2.9       |           | 1.8 | 0.49 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND        |           | 1.8 | 0.29 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | 5.5       |           | 1.8 | 0.89 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND        |           | 4.5 | 1.1  | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | 1.4       | J         | 4.5 | 1.2  | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| 6:2 FTS  | ND        |           | 4.5 | 2.3  | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| 8:2 FTS  | ND        |           | 1.8 | 0.42 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>20</b> |           | 1.8 | 0.49 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:47 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 78        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| 13C5 PFPeA       | 71        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| 13C2 PFHxA       | 81        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| 13C4 PFHpA       | 82        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| 13C4 PFOA        | 77        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| 13C5 PFNA        | 80        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| 13C2 PFDA        | 81        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| 13C2 PFUnA       | 77        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| 13C2 PFDoA       | 76        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| 13C2 PFTeDA      | 72        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| 13C3 PFBS        | 84        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| 18O2 PFHxS       | 81        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| 13C4 PFOS        | 85        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| 13C8 FOSA        | 97        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| d3-NMeFOSAA      | 74        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| d5-NEtFOSAA      | 79        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| M2-6:2 FTS       | 75        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:47 | 1       |
| M2-8:2 FTS       | 74        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:47 | 1       |

# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

**Client Sample ID: 52-77**  
**Date Collected: 03/10/22 10:25**  
**Date Received: 03/11/22 09:50**

**Lab Sample ID: 320-85693-2**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result    | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|-----------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | 2.4       | J         | 4.5 | 2.2  | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | 1.3       | J         | 1.8 | 0.44 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | 4.8       |           | 1.8 | 0.52 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | 4.3       |           | 1.8 | 0.22 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| Perfluorooctanoic acid (PFOA)                            | 25        |           | 1.8 | 0.76 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND        |           | 1.8 | 0.24 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND        |           | 1.8 | 0.28 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND        |           | 1.8 | 0.99 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND        |           | 1.8 | 0.49 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND        |           | 1.8 | 1.2  | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND        |           | 1.8 | 0.65 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | 6.1       |           | 1.8 | 0.18 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | 2.5       |           | 1.8 | 0.51 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 0.19      | J I       | 1.8 | 0.17 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | 4.1       | I         | 1.8 | 0.48 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND        |           | 1.8 | 0.29 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | 2.6       |           | 1.8 | 0.88 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND        |           | 4.5 | 1.1  | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND        |           | 4.5 | 1.2  | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| 6:2 FTS  | ND        |           | 4.5 | 2.2  | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| 8:2 FTS  | ND        |           | 1.8 | 0.41 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>29</b> |           | 1.8 | 0.48 | ng/L |   | 03/16/22 12:33 | 03/19/22 19:57 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 81        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| 13C5 PFPeA       | 75        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| 13C2 PFHxA       | 80        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| 13C4 PFHpA       | 86        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| 13C4 PFOA        | 82        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| 13C5 PFNA        | 82        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| 13C2 PFDA        | 83        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| 13C2 PFUnA       | 81        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| 13C2 PFDoA       | 75        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| 13C2 PFTeDA      | 75        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| 13C3 PFBS        | 81        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| 18O2 PFHxS       | 83        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| 13C4 PFOS        | 85        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| 13C8 FOSA        | 90        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| d3-NMeFOSAA      | 75        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| d5-NEtFOSAA      | 79        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| M2-6:2 FTS       | 76        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:57 | 1       |
| M2-8:2 FTS       | 78        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 19:57 | 1       |

# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

**Client Sample ID: 40-15**  
**Date Collected: 03/10/22 11:20**  
**Date Received: 03/11/22 09:50**

**Lab Sample ID: 320-85693-3**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result     | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|------------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND         |           | 4.7 | 2.3  | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND         |           | 1.9 | 0.46 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND         |           | 1.9 | 0.55 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | ND         |           | 1.9 | 0.24 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>                     | <b>3.6</b> |           | 1.9 | 0.80 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND         |           | 1.9 | 0.25 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND         |           | 1.9 | 0.29 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND         |           | 1.9 | 1.0  | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND         |           | 1.9 | 0.52 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND         |           | 1.9 | 1.2  | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND         |           | 1.9 | 0.69 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| <b>Perfluorobutanesulfonic acid (PFBS)</b>               | <b>2.2</b> |           | 1.9 | 0.19 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| <b>Perfluorohexanesulfonic acid (PFHxS)</b>              | <b>2.1</b> |           | 1.9 | 0.54 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND         |           | 1.9 | 0.18 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| <b>Perfluorooctanesulfonic acid (PFOS)</b>               | <b>2.6</b> |           | 1.9 | 0.51 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND         |           | 1.9 | 0.30 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| <b>Perfluorooctanesulfonamide (FOSA)</b>                 | <b>3.6</b> |           | 1.9 | 0.92 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND         |           | 4.7 | 1.1  | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND         |           | 4.7 | 1.2  | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| 6:2 FTS  | ND         |           | 4.7 | 2.4  | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| 8:2 FTS  | ND         |           | 1.9 | 0.43 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>6.2</b> |           | 1.9 | 0.51 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:08 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 82        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| 13C5 PFPeA       | 77        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| 13C2 PFHxA       | 84        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| 13C4 PFHpA       | 89        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| 13C4 PFOA        | 85        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| 13C5 PFNA        | 82        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| 13C2 PFDA        | 83        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| 13C2 PFUnA       | 75        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| 13C2 PFDoA       | 71        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| 13C2 PFTeDA      | 80        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| 13C3 PFBS        | 85        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| 18O2 PFHxS       | 90        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| 13C4 PFOS        | 88        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| 13C8 FOSA        | 98        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| d3-NMeFOSAA      | 72        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| d5-NEtFOSAA      | 80        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| M2-6:2 FTS       | 83        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:08 | 1       |
| M2-8:2 FTS       | 78        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:08 | 1       |

# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

**Client Sample ID: DUP03**

**Lab Sample ID: 320-85693-4**

**Date Collected: 03/10/22 12:00**

**Matrix: Water**

**Date Received: 03/11/22 09:50**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result     | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|------------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND         |           | 4.6 | 2.2  | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| <b>Perfluoropentanoic acid (PFPeA)</b>                   | <b>1.6</b> | <b>J</b>  | 1.8 | 0.45 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| <b>Perfluorohexanoic acid (PFHxA)</b>                    | <b>5.0</b> |           | 1.8 | 0.53 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| <b>Perfluoroheptanoic acid (PFHpA)</b>                   | <b>4.1</b> |           | 1.8 | 0.23 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>                     | <b>21</b>  |           | 1.8 | 0.77 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND         |           | 1.8 | 0.25 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND         |           | 1.8 | 0.28 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND         |           | 1.8 | 1.0  | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND         |           | 1.8 | 0.50 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND         |           | 1.8 | 1.2  | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND         |           | 1.8 | 0.66 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| <b>Perfluorobutanesulfonic acid (PFBS)</b>               | <b>5.8</b> |           | 1.8 | 0.18 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| <b>Perfluorohexanesulfonic acid (PFHxS)</b>              | <b>2.3</b> |           | 1.8 | 0.52 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND         |           | 1.8 | 0.17 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| <b>Perfluorooctanesulfonic acid (PFOS)</b>               | <b>4.0</b> | <b>I</b>  | 1.8 | 0.49 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND         |           | 1.8 | 0.29 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| <b>Perfluorooctanesulfonamide (FOSA)</b>                 | <b>2.3</b> |           | 1.8 | 0.89 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND         |           | 4.6 | 1.1  | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND         |           | 4.6 | 1.2  | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| 6:2 FTS  | ND         |           | 4.6 | 2.3  | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| 8:2 FTS  | ND         |           | 1.8 | 0.42 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>25</b>  |           | 1.8 | 0.49 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:18 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 85        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| 13C5 PFPeA       | 81        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| 13C2 PFHxA       | 82        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| 13C4 PFHpA       | 88        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| 13C4 PFOA        | 85        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| 13C5 PFNA        | 82        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| 13C2 PFDA        | 83        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| 13C2 PFUnA       | 82        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| 13C2 PFDoA       | 82        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| 13C2 PFTeDA      | 77        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| 13C3 PFBS        | 86        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| 18O2 PFHxS       | 88        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| 13C4 PFOS        | 83        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| 13C8 FOSA        | 99        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| d3-NMeFOSAA      | 79        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| d5-NEtFOSAA      | 85        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| M2-6:2 FTS       | 78        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:18 | 1       |
| M2-8:2 FTS       | 78        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:18 | 1       |

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

**Client Sample ID: 52-46**  
**Date Collected: 03/10/22 12:10**  
**Date Received: 03/11/22 09:50**

**Lab Sample ID: 320-85693-5**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result     | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|------------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND         |           | 4.8 | 2.3  | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND         |           | 1.9 | 0.47 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| <b>Perfluorohexanoic acid (PFHxA)</b>                    | <b>1.7</b> | <b>J</b>  | 1.9 | 0.55 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| <b>Perfluoroheptanoic acid (PFHpA)</b>                   | <b>3.3</b> |           | 1.9 | 0.24 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>                     | <b>29</b>  |           | 1.9 | 0.81 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND         |           | 1.9 | 0.26 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND         |           | 1.9 | 0.29 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND         |           | 1.9 | 1.0  | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND         |           | 1.9 | 0.52 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND         |           | 1.9 | 1.2  | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND         |           | 1.9 | 0.69 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| <b>Perfluorobutanesulfonic acid (PFBS)</b>               | <b>3.0</b> |           | 1.9 | 0.19 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| <b>Perfluorohexanesulfonic acid (PFHxS)</b>              | <b>3.9</b> |           | 1.9 | 0.54 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND         |           | 1.9 | 0.18 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| <b>Perfluorooctanesulfonic acid (PFOS)</b>               | <b>2.6</b> | <b>I</b>  | 1.9 | 0.51 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND         |           | 1.9 | 0.30 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| <b>Perfluorooctanesulfonamide (FOSA)</b>                 | <b>5.3</b> |           | 1.9 | 0.93 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND         |           | 4.8 | 1.1  | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND         |           | 4.8 | 1.2  | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| 6:2 FTS  | ND         |           | 4.8 | 2.4  | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| 8:2 FTS  | ND         |           | 1.9 | 0.44 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>32</b>  |           | 1.9 | 0.51 | ng/L |   | 03/16/22 12:33 | 03/19/22 20:49 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 73        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| 13C5 PFPeA       | 69        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| 13C2 PFHxA       | 76        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| 13C4 PFHpA       | 73        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| 13C4 PFOA        | 74        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| 13C5 PFNA        | 78        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| 13C2 PFDA        | 78        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| 13C2 PFUnA       | 73        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| 13C2 PFDoA       | 71        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| 13C2 PFTeDA      | 71        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| 13C3 PFBS        | 73        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| 18O2 PFHxS       | 80        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| 13C4 PFOS        | 77        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| 13C8 FOSA        | 88        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| d3-NMeFOSAA      | 76        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| d5-NEtFOSAA      | 83        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| M2-6:2 FTS       | 71        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:49 | 1       |
| M2-8:2 FTS       | 72        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 20:49 | 1       |



# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

**Client Sample ID: W-2**

**Lab Sample ID: 320-85693-6**

Date Collected: 03/10/22 12:40

Matrix: Water

Date Received: 03/11/22 09:50

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result     | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|------------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | 11         |           | 4.5 | 2.2  | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | 18         |           | 1.8 | 0.44 | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | 40         |           | 1.8 | 0.52 | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | 42         |           | 1.8 | 0.23 | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| Perfluorooctanoic acid (PFOA)                            | 250        |           | 1.8 | 0.77 | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| Perfluorononanoic acid (PFNA)                            | 7.7        |           | 1.8 | 0.24 | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| Perfluorodecanoic acid (PFDA)                            | 7.2        |           | 1.8 | 0.28 | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | 1.4 J      |           | 1.8 | 1.0  | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND         |           | 1.8 | 0.50 | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND         |           | 1.8 | 1.2  | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND         |           | 1.8 | 0.66 | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | 4.9        |           | 1.8 | 0.18 | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | 12         |           | 1.8 | 0.52 | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 2.8        |           | 1.8 | 0.17 | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | 180        |           | 1.8 | 0.49 | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND         |           | 1.8 | 0.29 | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | 9.7        |           | 1.8 | 0.89 | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND         |           | 4.5 | 1.1  | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | 15         |           | 4.5 | 1.2  | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| 6:2 FTS  | ND         |           | 4.5 | 2.3  | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| 8:2 FTS  | ND         |           | 1.8 | 0.42 | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>430</b> |           | 1.8 | 0.49 | ng/L |   | 03/16/22 12:33 | 03/19/22 21:00 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 82        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| 13C5 PFPeA       | 77        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| 13C2 PFHxA       | 82        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| 13C4 PFHpA       | 84        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| 13C4 PFOA        | 78        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| 13C5 PFNA        | 81        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| 13C2 PFDA        | 92        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| 13C2 PFUnA       | 82        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| 13C2 PFDoA       | 76        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| 13C2 PFTeDA      | 77        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| 13C3 PFBS        | 82        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| 18O2 PFHxS       | 87        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| 13C4 PFOS        | 83        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| 13C8 FOSA        | 99        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| d3-NMeFOSAA      | 81        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| d5-NEtFOSAA      | 86        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| M2-6:2 FTS       | 77        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 21:00 | 1       |
| M2-8:2 FTS       | 87        |           | 25 - 150 | 03/16/22 12:33 | 03/19/22 21:00 | 1       |

Eurofins Sacramento

# Isotope Dilution Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID       | Client Sample ID       | PFBA<br>(25-150) | PFPeA<br>(25-150) | PFHxA<br>(25-150) | C4PFHA<br>(25-150) | PFOA<br>(25-150) | PFNA<br>(25-150) | PFDA<br>(25-150) | PFUnA<br>(25-150) |
|---------------------|------------------------|------------------|-------------------|-------------------|--------------------|------------------|------------------|------------------|-------------------|
| 320-85693-1         | 52-78                  | 78               | 71                | 81                | 82                 | 77               | 80               | 81               | 77                |
| 320-85693-2         | 52-77                  | 81               | 75                | 80                | 86                 | 82               | 82               | 83               | 81                |
| 320-85693-3         | 40-15                  | 82               | 77                | 84                | 89                 | 85               | 82               | 83               | 75                |
| 320-85693-4         | DUP03                  | 85               | 81                | 82                | 88                 | 85               | 82               | 83               | 82                |
| 320-85693-5         | 52-46                  | 73               | 69                | 76                | 73                 | 74               | 78               | 78               | 73                |
| 320-85693-6         | W-2                    | 82               | 77                | 82                | 84                 | 78               | 81               | 92               | 82                |
| LCS 320-573412/2-A  | Lab Control Sample     | 111              | 116               | 98                | 97                 | 104              | 101              | 95               | 93                |
| LCSD 320-573412/3-A | Lab Control Sample Dup | 100              | 105               | 93                | 90                 | 102              | 94               | 91               | 88                |
| MB 320-573412/1-A   | Method Blank           | 97               | 98                | 92                | 87                 | 99               | 91               | 90               | 86                |

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID       | Client Sample ID       | PFDaA<br>(25-150) | PFTDA<br>(25-150) | C3PFBS<br>(25-150) | PFHxS<br>(25-150) | PFOS<br>(25-150) | PFOSA<br>(25-150) | d3NMFOS<br>(25-150) | d5NEFOS<br>(25-150) |
|---------------------|------------------------|-------------------|-------------------|--------------------|-------------------|------------------|-------------------|---------------------|---------------------|
| 320-85693-1         | 52-78                  | 76                | 72                | 84                 | 81                | 85               | 97                | 74                  | 79                  |
| 320-85693-2         | 52-77                  | 75                | 75                | 81                 | 83                | 85               | 90                | 75                  | 79                  |
| 320-85693-3         | 40-15                  | 71                | 80                | 85                 | 90                | 88               | 98                | 72                  | 80                  |
| 320-85693-4         | DUP03                  | 82                | 77                | 86                 | 88                | 83               | 99                | 79                  | 85                  |
| 320-85693-5         | 52-46                  | 71                | 71                | 73                 | 80                | 77               | 88                | 76                  | 83                  |
| 320-85693-6         | W-2                    | 76                | 77                | 82                 | 87                | 83               | 99                | 81                  | 86                  |
| LCS 320-573412/2-A  | Lab Control Sample     | 93                | 103               | 105                | 107               | 107              | 98                | 111                 | 113                 |
| LCSD 320-573412/3-A | Lab Control Sample Dup | 96                | 92                | 96                 | 96                | 104              | 95                | 99                  | 98                  |
| MB 320-573412/1-A   | Method Blank           | 87                | 96                | 102                | 103               | 103              | 93                | 104                 | 105                 |

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID       | Client Sample ID       | M262FTS<br>(25-150) | M282FTS<br>(25-150) |
|---------------------|------------------------|---------------------|---------------------|
| 320-85693-1         | 52-78                  | 75                  | 74                  |
| 320-85693-2         | 52-77                  | 76                  | 78                  |
| 320-85693-3         | 40-15                  | 83                  | 78                  |
| 320-85693-4         | DUP03                  | 78                  | 78                  |
| 320-85693-5         | 52-46                  | 71                  | 72                  |
| 320-85693-6         | W-2                    | 77                  | 87                  |
| LCS 320-573412/2-A  | Lab Control Sample     | 102                 | 101                 |
| LCSD 320-573412/3-A | Lab Control Sample Dup | 101                 | 93                  |
| MB 320-573412/1-A   | Method Blank           | 95                  | 96                  |

#### Surrogate Legend

- PFBA = 13C4 PFBA
- PFPeA = 13C5 PFPeA
- PFHxA = 13C2 PFHxA
- C4PFHA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFUnA = 13C2 PFUnA
- PFDaA = 13C2 PFDaA
- PFTDA = 13C2 PFTeDA
- C3PFBS = 13C3 PFBS
- PFHxS = 18O2 PFHxS
- PFOS = 13C4 PFOS
- PFOSA = 13C8 FOSA

Eurofins Sacramento

# Isotope Dilution Summary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site  
d3NMFOS = d3-NMeFOSAA  
d5NEFOS = d5-NEtFOSAA  
M262FTS = M2-6:2 FTS  
M282FTS = M2-8:2 FTS

Job ID: 320-85693-1

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

**Lab Sample ID: MB 320-573412/1-A**  
**Matrix: Water**  
**Analysis Batch: 573582**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 573412**

| Analyte  | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|  | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluorobutanoic acid (PFBA)                            | ND     |           | 5.0 | 2.4  | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND     |           | 2.0 | 0.49 | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND     |           | 2.0 | 0.58 | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | ND     |           | 2.0 | 0.25 | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| Perfluorooctanoic acid (PFOA)                            | ND     |           | 2.0 | 0.85 | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND     |           | 2.0 | 0.27 | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND     |           | 2.0 | 0.31 | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND     |           | 2.0 | 1.1  | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND     |           | 2.0 | 0.55 | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND     |           | 2.0 | 1.3  | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND     |           | 2.0 | 0.73 | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | ND     |           | 2.0 | 0.20 | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | ND     |           | 2.0 | 0.57 | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND     |           | 2.0 | 0.19 | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | ND     |           | 2.0 | 0.54 | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND     |           | 2.0 | 0.32 | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND     |           | 2.0 | 0.98 | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND     |           | 5.0 | 1.2  | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND     |           | 5.0 | 1.3  | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| 6:2 FTS  | ND     |           | 5.0 | 2.5  | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| 8:2 FTS  | ND     |           | 2.0 | 0.46 | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| Total PFOA and PFOS                                      | ND     |           | 2.0 | 0.54 | ng/L |   | 03/16/22 12:33 | 03/17/22 12:55 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFBA        | 97        |           | 25 - 150 | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| 13C5 PFPeA       | 98        |           | 25 - 150 | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| 13C2 PFHxA       | 92        |           | 25 - 150 | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| 13C4 PFHpA       | 87        |           | 25 - 150 | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| 13C4 PFOA        | 99        |           | 25 - 150 | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| 13C5 PFNA        | 91        |           | 25 - 150 | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| 13C2 PFDA        | 90        |           | 25 - 150 | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| 13C2 PFUnA       | 86        |           | 25 - 150 | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| 13C2 PFDoA       | 87        |           | 25 - 150 | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| 13C2 PFTeDA      | 96        |           | 25 - 150 | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| 13C3 PFBS        | 102       |           | 25 - 150 | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| 18O2 PFHxS       | 103       |           | 25 - 150 | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| 13C4 PFOS        | 103       |           | 25 - 150 | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| 13C8 FOSA        | 93        |           | 25 - 150 | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| d3-NMeFOSAA      | 104       |           | 25 - 150 | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| d5-NEtFOSAA      | 105       |           | 25 - 150 | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| M2-6:2 FTS       | 95        |           | 25 - 150 | 03/16/22 12:33 | 03/17/22 12:55 | 1       |
| M2-8:2 FTS       | 96        |           | 25 - 150 | 03/16/22 12:33 | 03/17/22 12:55 | 1       |

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-573412/2-A**  
**Matrix: Water**  
**Analysis Batch: 573582**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 573412**

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|--|-------------|------------|---------------|------|---|------|--------------|
| Perfluorobutanoic acid (PFBA)                            | 40.0        | 43.8       |               | ng/L |   | 109  | 76 - 136     |
| Perfluoropentanoic acid (PFPeA)                          | 40.0        | 41.3       |               | ng/L |   | 103  | 71 - 131     |
| Perfluorohexanoic acid (PFHxA)                           | 40.0        | 41.5       |               | ng/L |   | 104  | 73 - 133     |
| Perfluoroheptanoic acid (PFHpA)                          | 40.0        | 37.8       |               | ng/L |   | 94   | 72 - 132     |
| Perfluorooctanoic acid (PFOA)                            | 40.0        | 37.9       |               | ng/L |   | 95   | 70 - 130     |
| Perfluorononanoic acid (PFNA)                            | 40.0        | 41.2       |               | ng/L |   | 103  | 75 - 135     |
| Perfluorodecanoic acid (PFDA)                            | 40.0        | 40.5       |               | ng/L |   | 101  | 76 - 136     |
| Perfluoroundecanoic acid (PFUnA)                         | 40.0        | 42.7       |               | ng/L |   | 107  | 68 - 128     |
| Perfluorododecanoic acid (PFDoA)                         | 40.0        | 44.7       |               | ng/L |   | 112  | 71 - 131     |
| Perfluorotridecanoic acid (PFTriA)                       | 40.0        | 47.0       |               | ng/L |   | 117  | 71 - 131     |
| Perfluorotetradecanoic acid (PFTeA)                      | 40.0        | 39.6       |               | ng/L |   | 99   | 70 - 130     |
| Perfluorobutanesulfonic acid (PFBS)                      | 35.4        | 37.7       |               | ng/L |   | 107  | 67 - 127     |
| Perfluorohexanesulfonic acid (PFHxS)                     | 36.4        | 38.6       |               | ng/L |   | 106  | 59 - 119     |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 38.1        | 38.8       |               | ng/L |   | 102  | 76 - 136     |
| Perfluorooctanesulfonic acid (PFOS)                      | 37.1        | 36.8       |               | ng/L |   | 99   | 70 - 130     |
| Perfluorodecanesulfonic acid (PFDS)                      | 38.6        | 36.2       |               | ng/L |   | 94   | 71 - 131     |
| Perfluorooctanesulfonamide (FOSA)                        | 40.0        | 46.6       |               | ng/L |   | 117  | 73 - 133     |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 40.0        | 39.8       |               | ng/L |   | 100  | 76 - 136     |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | 40.0        | 40.2       |               | ng/L |   | 100  | 76 - 136     |
| 6:2 FTS  | 37.9        | 36.3       |               | ng/L |   | 96   | 59 - 175     |
| 8:2 FTS  | 38.3        | 38.9       |               | ng/L |   | 102  | 75 - 135     |

| Isotope Dilution | LCS LCS   |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFBA        | 111       |           | 25 - 150 |
| 13C5 PFPeA       | 116       |           | 25 - 150 |
| 13C2 PFHxA       | 98        |           | 25 - 150 |
| 13C4 PFHpA       | 97        |           | 25 - 150 |
| 13C4 PFOA        | 104       |           | 25 - 150 |
| 13C5 PFNA        | 101       |           | 25 - 150 |
| 13C2 PFDA        | 95        |           | 25 - 150 |
| 13C2 PFUnA       | 93        |           | 25 - 150 |
| 13C2 PFDoA       | 93        |           | 25 - 150 |
| 13C2 PFTeDA      | 103       |           | 25 - 150 |
| 13C3 PFBS        | 105       |           | 25 - 150 |
| 18O2 PFHxS       | 107       |           | 25 - 150 |
| 13C4 PFOS        | 107       |           | 25 - 150 |
| 13C8 FOSA        | 98        |           | 25 - 150 |
| d3-NMeFOSAA      | 111       |           | 25 - 150 |
| d5-NEtFOSAA      | 113       |           | 25 - 150 |

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-573412/2-A**  
**Matrix: Water**  
**Analysis Batch: 573582**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 573412**

| <i>Isotope Dilution</i> | <i>LCS</i>       | <i>LCS</i>       | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| M2-6:2 FTS              | 102              |                  | 25 - 150      |
| M2-8:2 FTS              | 101              |                  | 25 - 150      |

**Lab Sample ID: LCSD 320-573412/3-A**  
**Matrix: Water**  
**Analysis Batch: 573582**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 573412**

| <i>Analyte</i>   | <i>Spike</i> | <i>LCSD</i>   | <i>LCSD</i>      | <i>Unit</i> | <i>D</i> | <i>%Rec</i> | <i>%Rec.</i>  | <i>RPD</i> | <i>RPD</i> | <i>Limit</i> |
|--|--------------|---------------|------------------|-------------|----------|-------------|---------------|------------|------------|--------------|
|  | <i>Added</i> | <i>Result</i> | <i>Qualifier</i> |             |          |             | <i>Limits</i> |            |            |              |
| Perfluorobutanoic acid (PFBA)                            | 40.0         | 44.5          |                  | ng/L        |          | 111         | 76 - 136      | 2          |            | 30           |
| Perfluoropentanoic acid (PFPeA)                          | 40.0         | 41.1          |                  | ng/L        |          | 103         | 71 - 131      | 1          |            | 30           |
| Perfluorohexanoic acid (PFHxA)                           | 40.0         | 38.8          |                  | ng/L        |          | 97          | 73 - 133      | 7          |            | 30           |
| Perfluoroheptanoic acid (PFHpA)                          | 40.0         | 39.5          |                  | ng/L        |          | 99          | 72 - 132      | 4          |            | 30           |
| Perfluorooctanoic acid (PFOA)                            | 40.0         | 36.0          |                  | ng/L        |          | 90          | 70 - 130      | 5          |            | 30           |
| Perfluorononanoic acid (PFNA)                            | 40.0         | 42.0          |                  | ng/L        |          | 105         | 75 - 135      | 2          |            | 30           |
| Perfluorodecanoic acid (PFDA)                            | 40.0         | 41.8          |                  | ng/L        |          | 105         | 76 - 136      | 3          |            | 30           |
| Perfluoroundecanoic acid (PFUnA)                         | 40.0         | 42.9          |                  | ng/L        |          | 107         | 68 - 128      | 0          |            | 30           |
| Perfluorododecanoic acid (PFDoA)                         | 40.0         | 40.9          |                  | ng/L        |          | 102         | 71 - 131      | 9          |            | 30           |
| Perfluorotridecanoic acid (PFTriA)                       | 40.0         | 41.7          |                  | ng/L        |          | 104         | 71 - 131      | 12         |            | 30           |
| Perfluorotetradecanoic acid (PFTeA)                      | 40.0         | 39.9          |                  | ng/L        |          | 100         | 70 - 130      | 1          |            | 30           |
| Perfluorobutanesulfonic acid (PFBS)                      | 35.4         | 38.4          |                  | ng/L        |          | 109         | 67 - 127      | 2          |            | 30           |
| Perfluorohexanesulfonic acid (PFHxS)                     | 36.4         | 37.9          |                  | ng/L        |          | 104         | 59 - 119      | 2          |            | 30           |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 38.1         | 37.8          |                  | ng/L        |          | 99          | 76 - 136      | 3          |            | 30           |
| Perfluorooctanesulfonic acid (PFOS)                      | 37.1         | 37.3          |                  | ng/L        |          | 100         | 70 - 130      | 1          |            | 30           |
| Perfluorodecanesulfonic acid (PFDS)                      | 38.6         | 34.6          |                  | ng/L        |          | 90          | 71 - 131      | 4          |            | 30           |
| Perfluorooctanesulfonamide (FOSA)                        | 40.0         | 45.2          |                  | ng/L        |          | 113         | 73 - 133      | 3          |            | 30           |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 40.0         | 39.5          |                  | ng/L        |          | 99          | 76 - 136      | 1          |            | 30           |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | 40.0         | 41.4          |                  | ng/L        |          | 104         | 76 - 136      | 3          |            | 30           |
| 6:2 FTS  | 37.9         | 36.5          |                  | ng/L        |          | 96          | 59 - 175      | 1          |            | 30           |
| 8:2 FTS  | 38.3         | 39.9          |                  | ng/L        |          | 104         | 75 - 135      | 3          |            | 30           |

| <i>Isotope Dilution</i> | <i>LCSD</i>      | <i>LCSD</i>      | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFBA               | 100              |                  | 25 - 150      |
| 13C5 PFPeA              | 105              |                  | 25 - 150      |
| 13C2 PFHxA              | 93               |                  | 25 - 150      |
| 13C4 PFHpA              | 90               |                  | 25 - 150      |
| 13C4 PFOA               | 102              |                  | 25 - 150      |
| 13C5 PFNA               | 94               |                  | 25 - 150      |
| 13C2 PFDA               | 91               |                  | 25 - 150      |
| 13C2 PFUnA              | 88               |                  | 25 - 150      |
| 13C2 PFDoA              | 96               |                  | 25 - 150      |



# QC Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-573412/3-A

Matrix: Water

Analysis Batch: 573582

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 573412

| <i>Isotope Dilution</i> | <i>LCSD LCSD</i> |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C2 PFTeDA             | 92               |                  | 25 - 150      |
| 13C3 PFBS               | 96               |                  | 25 - 150      |
| 18O2 PFHxS              | 96               |                  | 25 - 150      |
| 13C4 PFOS               | 104              |                  | 25 - 150      |
| 13C8 FOSA               | 95               |                  | 25 - 150      |
| d3-NMeFOSAA             | 99               |                  | 25 - 150      |
| d5-NEtFOSAA             | 98               |                  | 25 - 150      |
| M2-6:2 FTS              | 101              |                  | 25 - 150      |
| M2-8:2 FTS              | 93               |                  | 25 - 150      |

# QC Association Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

## LCMS

### Prep Batch: 573412

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 320-85693-1         | 52-78                  | Total/NA  | Water  | 3535   |            |
| 320-85693-2         | 52-77                  | Total/NA  | Water  | 3535   |            |
| 320-85693-3         | 40-15                  | Total/NA  | Water  | 3535   |            |
| 320-85693-4         | DUP03                  | Total/NA  | Water  | 3535   |            |
| 320-85693-5         | 52-46                  | Total/NA  | Water  | 3535   |            |
| 320-85693-6         | W-2                    | Total/NA  | Water  | 3535   |            |
| MB 320-573412/1-A   | Method Blank           | Total/NA  | Water  | 3535   |            |
| LCS 320-573412/2-A  | Lab Control Sample     | Total/NA  | Water  | 3535   |            |
| LCSD 320-573412/3-A | Lab Control Sample Dup | Total/NA  | Water  | 3535   |            |

### Analysis Batch: 573582

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method         | Prep Batch |
|---------------------|------------------------|-----------|--------|----------------|------------|
| MB 320-573412/1-A   | Method Blank           | Total/NA  | Water  | 537 (modified) | 573412     |
| LCS 320-573412/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 (modified) | 573412     |
| LCSD 320-573412/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 (modified) | 573412     |

### Analysis Batch: 574190

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method         | Prep Batch |
|---------------|------------------|-----------|--------|----------------|------------|
| 320-85693-1   | 52-78            | Total/NA  | Water  | 537 (modified) | 573412     |
| 320-85693-2   | 52-77            | Total/NA  | Water  | 537 (modified) | 573412     |
| 320-85693-3   | 40-15            | Total/NA  | Water  | 537 (modified) | 573412     |
| 320-85693-4   | DUP03            | Total/NA  | Water  | 537 (modified) | 573412     |
| 320-85693-5   | 52-46            | Total/NA  | Water  | 537 (modified) | 573412     |
| 320-85693-6   | W-2              | Total/NA  | Water  | 537 (modified) | 573412     |

# Lab Chronicle

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

## Client Sample ID: 52-78

Date Collected: 03/10/22 09:40

Date Received: 03/11/22 09:50

## Lab Sample ID: 320-85693-1

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 275.8 mL       | 10.0 mL      | 573412       | 03/16/22 12:33       | DVC     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 574190       | 03/19/22 19:47       | S1M     | TAL SAC |

## Client Sample ID: 52-77

Date Collected: 03/10/22 10:25

Date Received: 03/11/22 09:50

## Lab Sample ID: 320-85693-2

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 278.7 mL       | 10.0 mL      | 573412       | 03/16/22 12:33       | DVC     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 574190       | 03/19/22 19:57       | S1M     | TAL SAC |

## Client Sample ID: 40-15

Date Collected: 03/10/22 11:20

Date Received: 03/11/22 09:50

## Lab Sample ID: 320-85693-3

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 265.7 mL       | 10.0 mL      | 573412       | 03/16/22 12:33       | DVC     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 574190       | 03/19/22 20:08       | S1M     | TAL SAC |

## Client Sample ID: DUP03

Date Collected: 03/10/22 12:00

Date Received: 03/11/22 09:50

## Lab Sample ID: 320-85693-4

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 274.7 mL       | 10.0 mL      | 573412       | 03/16/22 12:33       | DVC     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 574190       | 03/19/22 20:18       | S1M     | TAL SAC |

## Client Sample ID: 52-46

Date Collected: 03/10/22 12:10

Date Received: 03/11/22 09:50

## Lab Sample ID: 320-85693-5

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 262.9 mL       | 10.0 mL      | 573412       | 03/16/22 12:33       | DVC     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 574190       | 03/19/22 20:49       | S1M     | TAL SAC |

## Client Sample ID: W-2

Date Collected: 03/10/22 12:40

Date Received: 03/11/22 09:50

## Lab Sample ID: 320-85693-6

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 276.2 mL       | 10.0 mL      | 573412       | 03/16/22 12:33       | DVC     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 574190       | 03/19/22 21:00       | S1M     | TAL SAC |

### Laboratory References:

TAL SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Eurofins Sacramento

# Accreditation/Certification Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

## Laboratory: Eurofins Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | CA00004               | 04-14-22        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte  |
|-----------------|-------------|--------|--|
| 537 (modified)  | 3535        | Water  | 6:2 FTS  |
| 537 (modified)  | 3535        | Water  | 8:2 FTS  |
| 537 (modified)  | 3535        | Water  | N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  |
| 537 (modified)  | 3535        | Water  | N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) |
| 537 (modified)  | 3535        | Water  | Perfluorobutanesulfonic acid (PFBS)                      |
| 537 (modified)  | 3535        | Water  | Perfluorobutanoic acid (PFBA)                            |
| 537 (modified)  | 3535        | Water  | Perfluorodecanesulfonic acid (PFDS)                      |
| 537 (modified)  | 3535        | Water  | Perfluorodecanoic acid (PFDA)                            |
| 537 (modified)  | 3535        | Water  | Perfluorododecanoic acid (PFDoA)                         |
| 537 (modified)  | 3535        | Water  | Perfluoroheptanesulfonic Acid (PFHpS)                    |
| 537 (modified)  | 3535        | Water  | Perfluoroheptanoic acid (PFHpA)                          |
| 537 (modified)  | 3535        | Water  | Perfluorohexanesulfonic acid (PFHxS)                     |
| 537 (modified)  | 3535        | Water  | Perfluorohexanoic acid (PFHxA)                           |
| 537 (modified)  | 3535        | Water  | Perfluorononanoic acid (PFNA)                            |
| 537 (modified)  | 3535        | Water  | Perfluorooctanesulfonamide (FOSA)                        |
| 537 (modified)  | 3535        | Water  | Perfluorooctanesulfonic acid (PFOS)                      |
| 537 (modified)  | 3535        | Water  | Perfluorooctanoic acid (PFOA)                            |
| 537 (modified)  | 3535        | Water  | Perfluoropentanoic acid (PFPeA)                          |
| 537 (modified)  | 3535        | Water  | Perfluorotetradecanoic acid (PFTeA)                      |
| 537 (modified)  | 3535        | Water  | Perfluorotridecanoic acid (PFTriA)                       |
| 537 (modified)  | 3535        | Water  | Perfluoroundecanoic acid (PFUnA)                         |
| 537 (modified)  | 3535        | Water  | Total PFOA and PFOS                                      |

# Method Summary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

| Method         | Method Description           | Protocol | Laboratory |
|----------------|------------------------------|----------|------------|
| 537 (modified) | Fluorinated Alkyl Substances | EPA      | TAL SAC    |
| 3535           | Solid-Phase Extraction (SPE) | SW846    | TAL SAC    |

**Protocol References:**

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# Sample Summary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85693-1

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 320-85693-1   | 52-78            | Water  | 03/10/22 09:40 | 03/11/22 09:50 |
| 320-85693-2   | 52-77            | Water  | 03/10/22 10:25 | 03/11/22 09:50 |
| 320-85693-3   | 40-15            | Water  | 03/10/22 11:20 | 03/11/22 09:50 |
| 320-85693-4   | DUP03            | Water  | 03/10/22 12:00 | 03/11/22 09:50 |
| 320-85693-5   | 52-46            | Water  | 03/10/22 12:10 | 03/11/22 09:50 |
| 320-85693-6   | W-2              | Water  | 03/10/22 12:40 | 03/11/22 09:50 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



TAL-2710

| <p><b>Client Contact</b></p> <p>Company Name: <u>Wood E+IS</u><br/>         Address: <u>511 Congress St</u><br/>         City/State/Zip: <u>Portland, ME 04101</u><br/>         Phone: <u>1(202)775-5401</u><br/>         Fax: <u>1(202)772-4767</u><br/>         Project Name: <u>Tex Tech</u><br/>         Site: <u>North Massachusetts MF</u><br/>         P O # _____</p>   | <p><b>Regulatory Program:</b> <input type="checkbox"/> OW   <input type="checkbox"/> NPDES   <input type="checkbox"/> RCRA   <input type="checkbox"/> Other: _____</p> <p>Project Manager: <u>Rebecca Bussard</u><br/>         Tel/Email: <u>Rebecca.Bussard@eurofins.com</u>   <u>Lab Contact:</u> _____<br/>         Date: <u>07/10/2022</u>   <u>Carrier:</u> <u>Fed Ex</u></p> | <p>COC No: _____ of _____ COCs</p> <p>Sampler: <u>Envirolab P-2</u><br/>         For Lab Use Only:<br/>         Walk-in Client: _____<br/>         Lab Sampling: _____<br/>         Job / SDG No.: _____</p> | <p>Sample Specific Notes:</p>  |               |              |             |                                |        |            |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |                  |                    |                 |              |               |              |     |         |      |   |    |   |
|---|--|--|--------------------------------|---------------|--------------|-------------|--------------------------------|--------|------------|-------|---------|------|---|----|---|-------|---------|------|---|----|---|-------|---------|------|---|----|---|-------|---------|------|---|----|---|-------|---------|------|---|----|---|-------|---------|------|---|----|---|------------------|--------------------|-----------------|--------------|---------------|--------------|-----|---------|------|---|----|---|
| <p>Job # 537 POW Mod 402</p>  |  |  |                                |               |              |             |                                |        |            |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |                  |                    |                 |              |               |              |     |         |      |   |    |   |
| <p>320-85693 Chain of Custody</p>   |  |  |                                |               |              |             |                                |        |            |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |                  |                    |                 |              |               |              |     |         |      |   |    |   |
|   |  |  |                                |               |              |             |                                |        |            |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |                  |                    |                 |              |               |              |     |         |      |   |    |   |
| <p>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</p> <p><input type="checkbox"/> Return to Client   <input checked="" type="checkbox"/> Disposal by Lab   <input type="checkbox"/> Archive for _____ Months</p>   |  |  |                                |               |              |             |                                |        |            |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |                  |                    |                 |              |               |              |     |         |      |   |    |   |
| <p><b>Preservation Used:</b> 1=Ice; 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other</p> <p><b>Possible Hazard Identification:</b> Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.</p> <p><input checked="" type="checkbox"/> Non-Hazard   <input type="checkbox"/> Flammable   <input type="checkbox"/> Skin Irritant   <input type="checkbox"/> Poison 8   <input type="checkbox"/> Unknown</p> <p><b>Special Instructions/QC Requirements &amp; Comments:</b></p>   |  |  |                                |               |              |             |                                |        |            |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |                  |                    |                 |              |               |              |     |         |      |   |    |   |
| <p><b>Sample Identification</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Sample ID</th> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (IC-C, M, G, etc.)</th> <th>Matrix</th> <th># of Cont.</th> </tr> </thead> <tbody> <tr> <td>52-78</td> <td>3/10/22</td> <td>0940</td> <td>G</td> <td>GW</td> <td>2</td> </tr> <tr> <td>52-77</td> <td>3/10/22</td> <td>1025</td> <td>G</td> <td>GW</td> <td>2</td> </tr> <tr> <td>40-15</td> <td>3/10/22</td> <td>1120</td> <td>G</td> <td>GW</td> <td>2</td> </tr> <tr> <td>DU003</td> <td>3/10/22</td> <td>1200</td> <td>G</td> <td>GW</td> <td>2</td> </tr> <tr> <td>52-46</td> <td>3/10/22</td> <td>1210</td> <td>G</td> <td>GW</td> <td>2</td> </tr> <tr> <td>52-79</td> <td>3/10/22</td> <td>1440</td> <td>G</td> <td>GW</td> <td>2</td> </tr> <tr> <td><del>52-10</del></td> <td><del>3/10/22</del></td> <td><del>1210</del></td> <td><del>G</del></td> <td><del>GW</del></td> <td><del>2</del></td> </tr> <tr> <td>W-2</td> <td>3/10/22</td> <td>1240</td> <td>G</td> <td>GW</td> <td>2</td> </tr> </tbody> </table> |  |  |                                | Sample ID     | Sample Date  | Sample Time | Sample Type (IC-C, M, G, etc.) | Matrix | # of Cont. | 52-78 | 3/10/22 | 0940 | G | GW | 2 | 52-77 | 3/10/22 | 1025 | G | GW | 2 | 40-15 | 3/10/22 | 1120 | G | GW | 2 | DU003 | 3/10/22 | 1200 | G | GW | 2 | 52-46 | 3/10/22 | 1210 | G | GW | 2 | 52-79 | 3/10/22 | 1440 | G | GW | 2 | <del>52-10</del> | <del>3/10/22</del> | <del>1210</del> | <del>G</del> | <del>GW</del> | <del>2</del> | W-2 | 3/10/22 | 1240 | G | GW | 2 |
| Sample ID   | Sample Date  | Sample Time  | Sample Type (IC-C, M, G, etc.) | Matrix        | # of Cont.   |             |                                |        |            |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |                  |                    |                 |              |               |              |     |         |      |   |    |   |
| 52-78   | 3/10/22  | 0940   | G                              | GW            | 2            |             |                                |        |            |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |                  |                    |                 |              |               |              |     |         |      |   |    |   |
| 52-77   | 3/10/22  | 1025   | G                              | GW            | 2            |             |                                |        |            |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |                  |                    |                 |              |               |              |     |         |      |   |    |   |
| 40-15   | 3/10/22  | 1120   | G                              | GW            | 2            |             |                                |        |            |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |                  |                    |                 |              |               |              |     |         |      |   |    |   |
| DU003   | 3/10/22  | 1200   | G                              | GW            | 2            |             |                                |        |            |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |                  |                    |                 |              |               |              |     |         |      |   |    |   |
| 52-46   | 3/10/22  | 1210   | G                              | GW            | 2            |             |                                |        |            |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |                  |                    |                 |              |               |              |     |         |      |   |    |   |
| 52-79   | 3/10/22  | 1440   | G                              | GW            | 2            |             |                                |        |            |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |                  |                    |                 |              |               |              |     |         |      |   |    |   |
| <del>52-10</del>  | <del>3/10/22</del>   | <del>1210</del>  | <del>G</del>                   | <del>GW</del> | <del>2</del> |             |                                |        |            |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |                  |                    |                 |              |               |              |     |         |      |   |    |   |
| W-2   | 3/10/22  | 1240   | G                              | GW            | 2            |             |                                |        |            |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |                  |                    |                 |              |               |              |     |         |      |   |    |   |
| <p><b>Custody Seals Intact:</b> <input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No</p> <p>Relinquished by: <u>Rebecca Bussard</u>   Date/Time: <u>3/10/22 1400</u><br/>         Company: <u>Wood E+IS</u></p> <p>Relinquished by: _____   Date/Time: _____<br/>         Company: _____</p> <p>Relinquished by: _____   Date/Time: _____<br/>         Company: _____</p>  |  |  |                                |               |              |             |                                |        |            |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |                  |                    |                 |              |               |              |     |         |      |   |    |   |
| <p>Received by: <u>Fed Ex</u>   Date/Time: <u>3/10/22 1500</u><br/>         Company: <u>Fed Ex</u></p> <p>Received by: <u>ESSE</u>   Date/Time: <u>3-11-22 950</u><br/>         Company: _____</p> <p>Received in Laboratory by: _____   Date/Time: _____</p>   |  |  |                                |               |              |             |                                |        |            |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |       |         |      |   |    |   |                  |                    |                 |              |               |              |     |         |      |   |    |   |

TAL-9210

Regulatory Program:  DW  NPDES  RCRA  Other:

| Client Contact<br>Company Name: Wood E+IS<br>Address: 511 Congress St<br>City/State/Zip: Portland, ME 04101<br>Phone: (207) 775-5401<br>Fax: (207) 772-4962<br>Project Name: Tech Tech<br>Site: North Monmouth ME<br>P O #   |             | Project Manager: Rebecca Brisson<br>Tell/Email: Rebecca.Brisson@eurofins.com<br>Analysis Turnaround Time<br><input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS<br>TAT if different from Below<br><input checked="" type="checkbox"/> 2 weeks<br><input type="checkbox"/> 1 week<br><input type="checkbox"/> 2 days<br><input type="checkbox"/> 1 day |                              | Site Contact: Lindsey Papa<br>Lab Contact:<br>Job # PW 657 MSB 404<br>Perform MS/MSD (Y/N)<br>Filtered Sample (Y/N) |            | Date: 03/10/2022<br>Carrier: Fed Ex<br>COC No: 1 of 1 COCs<br>Sampler: Lindsey Papa<br>For Lab Use Only:<br>Walk-in Client:<br>Lab Sampling:<br>Job / SDG No.: |  |
|--|-------------|---|------------------------------|---|------------|--|--|
| Sample Identification  | Sample Date | Sample Time   | Sample Type (C=Comp, G=Grab) | Matrix  | # of Cont. | Sample Specific Notes:   |  |
| 52-118   | 3/10/22     | 0940  | G                            | GW  | 2          |  |  |
| 52-117   | 3/10/22     | 1025  | G                            | GW  | 2          |  |  |
| 40-15  | 3/10/22     | 1120  | G                            | GW  | 2          |  |  |
| DUPO3  | 3/10/22     | 1200  | G                            | GW  | 2          |  |  |
| 52-46  | 3/10/22     | 1210  | G                            | GW  | 2          |  |  |
| 52-74  | 3/10/22     | 0940  | G-LP                         |   |            |  |  |
| 52-46  | 3/10/22     | 1210  | G                            | GW  | 2          |  |  |
| W-2  | 3/10/22     | 1240  | G                            | GW  | 2          |  |  |
| Preservation Used: (1= Ice) 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other<br>Possible Hazard Identification:<br>Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. |             |   |                              |   |            |  |  |
| Special Instructions/QC Requirements & Comments:<br>SO 3-11-22<br>16930 959438<br>1693048  |             |   |                              |   |            |  |  |
| Relinquished by: Lindsey Papa<br>Date/Time: 3/10/22 1400<br>Company: Wood E+IS   |             | Received by: Fed Ex<br>Date/Time: 3/10/22 1500<br>Company: Fed Ex   |                              | Therm ID No.: LAB<br>Date/Time: 3/10/22 1500  |            | Date/Time: 3/11/22 9:50<br>Company: GETSAC   |  |



## Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 320-85693-1

**Login Number: 85693**

**List Source: Eurofins Sacramento**

**List Number: 1**

**Creator: Oropeza, Salvador**

| Question  | Answer | Comment        |
|---|--------|----------------|
| Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.      | True   |                |
| The cooler's custody seal, if present, is intact.   | True   | 1693048/959478 |
| Sample custody seals, if present, are intact.   | N/A    |                |
| The cooler or samples do not appear to have been compromised or tampered with.                      | True   |                |
| Samples were received on ice.   | True   |                |
| Cooler Temperature is acceptable.   | True   |                |
| Cooler Temperature is recorded.   | True   |                |
| COC is present.   | True   |                |
| COC is filled out in ink and legible.   | True   |                |
| COC is filled out with all pertinent information.   | True   |                |
| Is the Field Sampler's name present on COC?   | True   |                |
| There are no discrepancies between the containers received and the COC.                             | True   |                |
| Samples are received within Holding Time (excluding tests with immediate HTs)                       | True   |                |
| Sample containers have legible labels.  | True   |                |
| Containers are not broken or leaking.   | True   |                |
| Sample collection date/times are provided.  | True   |                |
| Appropriate sample containers are used.   | True   |                |
| Sample bottles are completely filled.   | True   |                |
| Sample Preservation Verified.   | N/A    |                |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs                    | True   |                |
| Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4"). | True   |                |
| Multiphasic samples are not present.  | True   |                |
| Samples do not require splitting or compositing.  | True   |                |
| Residual Chlorine Checked.  | N/A    |                |

## ANALYTICAL REPORT

Eurofins Sacramento  
880 Riverside Parkway  
West Sacramento, CA 95605  
Tel: (916)373-5600

Laboratory Job ID: 320-83481-1

Client Project/Site: PFAS - Tex Tech, ME Site  
Revision: 1

**For:**

Wood E&I Solutions Inc  
511 Congress St. Suite 200  
Portland, Maine 04101

Attn: Ms. Julie Ricardi



---

Authorized for release by:  
1/18/2022 11:59:06 AM

Jill Kellmann, Client Service Manager  
(916)374-4402  
[Jill.Kellmann@Eurofinset.com](mailto:Jill.Kellmann@Eurofinset.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 2  |
| Definitions/Glossary . . . . .     | 3  |
| Case Narrative . . . . .           | 4  |
| Detection Summary . . . . .        | 5  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 22 |
| QC Sample Results . . . . .        | 24 |
| QC Association Summary . . . . .   | 31 |
| Lab Chronicle . . . . .            | 32 |
| Certification Summary . . . . .    | 35 |
| Method Summary . . . . .           | 36 |
| Sample Summary . . . . .           | 37 |
| Chain of Custody . . . . .         | 38 |
| Receipt Checklists . . . . .       | 40 |
| Correspondence . . . . .           | 41 |



# Definitions/Glossary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| H         | Sample was prepped or analyzed beyond the specified holding time   |
| I         | Value is EMPC (estimated maximum possible concentration).  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |



# Case Narrative

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

---

## Job ID: 320-83481-1

---

### Laboratory: Eurofins Sacramento

#### Narrative

##### Comments

Report revised to include Blank results. The Blank samples were activated for analysis on 1/14/22.

##### Receipt

The samples were received on 12/30/2021 10:35 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.2° C.

##### LCMS

Method 537 (modified): Due to the high concentration of Perfluorooctanesulfonic acid (PFOS), the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-555892 and analytical batch 320-556555 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was above the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

##### Organic Prep

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batches 320-555892 and 320-558205.

Method 3535: The following samples were prepared outside of preparation holding time due to activation of the analysis past the 14 day holding time: 52-59-BLK (320-83481-2), W-1-BLK (320-83481-4), 52-63-BLK (320-83481-6), 52-65-BLK (320-83481-8), 52-61-BLK (320-83481-10), 46-63-BLK (320-83481-12) and 52-67-BLK (320-83481-14).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

## Client Sample ID: 52-59

## Lab Sample ID: 320-83481-1

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorohexanoic acid (PFHxA)       | 1.3    | J         | 1.9 | 0.56 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)      | 1.6    | J         | 1.9 | 0.24 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 16     |           | 1.9 | 0.82 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)  | 1.7    | J         | 1.9 | 0.19 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 2.6    |           | 1.9 | 0.55 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 1.6    | J I       | 1.9 | 0.52 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)    | 1.2    | J         | 1.9 | 0.95 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                  | 18     |           | 1.9 | 0.52 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 52-59-BLK

## Lab Sample ID: 320-83481-2

No Detections.

## Client Sample ID: W-1

## Lab Sample ID: 320-83481-3

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorobutanoic acid (PFBA)                            | 6.6    |           | 4.7 | 2.3  | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoropentanoic acid (PFPeA)                          | 11     |           | 1.9 | 0.46 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanoic acid (PFHxA)                           | 25     |           | 1.9 | 0.55 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)                          | 20     |           | 1.9 | 0.24 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)                            | 120    |           | 1.9 | 0.81 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorononanoic acid (PFNA)                            | 5.5    |           | 1.9 | 0.26 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorodecanoic acid (PFDA)                            | 9.2    |           | 1.9 | 0.29 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorododecanoic acid (PFDoA)                         | 0.54   | J         | 1.9 | 0.52 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)                      | 2.7    |           | 1.9 | 0.19 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS)                     | 7.3    |           | 1.9 | 0.54 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 1.6    | J         | 1.9 | 0.18 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)                      | 110    |           | 1.9 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)                        | 15     |           | 1.9 | 0.93 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 2.0    | J         | 4.7 | 1.1  | ng/L | 1       |   | 537 (modified) | Total/NA  |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | 150    |           | 4.7 | 1.2  | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                                      | 230    |           | 1.9 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: W-1-BLK

## Lab Sample ID: 320-83481-4

No Detections.

## Client Sample ID: 52-63

## Lab Sample ID: 320-83481-5

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorohexanoic acid (PFHxA)       | 1.7    | J         | 1.9 | 0.56 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)      | 2.3    |           | 1.9 | 0.24 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 21     |           | 1.9 | 0.82 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)  | 2.3    |           | 1.9 | 0.19 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 3.5    |           | 1.9 | 0.55 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 1.6    | J I       | 1.9 | 0.52 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)    | 1.5    | J         | 1.9 | 0.94 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                  | 23     |           | 1.9 | 0.52 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 52-63-BLK

## Lab Sample ID: 320-83481-6

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Sacramento

# Detection Summary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

## Client Sample ID: 52-65

## Lab Sample ID: 320-83481-7

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorobutanoic acid (PFBA)        | 3.0    | J         | 4.9 | 2.4  | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoropentanoic acid (PFPeA)      | 1.9    | J         | 2.0 | 0.48 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanoic acid (PFHxA)       | 3.9    |           | 2.0 | 0.57 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)      | 3.2    |           | 2.0 | 0.25 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 36     |           | 2.0 | 0.84 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)  | 2.5    |           | 2.0 | 0.20 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 3.9    |           | 2.0 | 0.56 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 9.1    | I         | 2.0 | 0.53 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                  | 45     |           | 2.0 | 0.53 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 52-65-BLK

## Lab Sample ID: 320-83481-8

No Detections.

## Client Sample ID: 52-61

## Lab Sample ID: 320-83481-9

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorohexanoic acid (PFHxA)       | 1.9    | J         | 2.0 | 0.57 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)      | 2.6    |           | 2.0 | 0.24 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 24     |           | 2.0 | 0.83 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)  | 2.2    |           | 2.0 | 0.20 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 3.7    |           | 2.0 | 0.56 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 2.5    | I         | 2.0 | 0.53 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)    | 3.8    |           | 2.0 | 0.96 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                  | 27     |           | 2.0 | 0.53 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 52-61-BLK

## Lab Sample ID: 320-83481-10

No Detections.

## Client Sample ID: 46-63

## Lab Sample ID: 320-83481-11

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorobutanoic acid (PFBA)        | 2.4    | J         | 4.7 | 2.3  | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoropentanoic acid (PFPeA)      | 1.4    | J         | 1.9 | 0.47 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanoic acid (PFHxA)       | 3.5    |           | 1.9 | 0.55 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)      | 3.1    |           | 1.9 | 0.24 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 22     |           | 1.9 | 0.81 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)  | 1.7    | J         | 1.9 | 0.19 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 1.8    | J         | 1.9 | 0.54 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 3.8    |           | 1.9 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)    | 1.7    | J         | 1.9 | 0.93 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                  | 26     |           | 1.9 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 46-63-BLK

## Lab Sample ID: 320-83481-12

No Detections.

## Client Sample ID: 52-67

## Lab Sample ID: 320-83481-13

| Analyte                         | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|---------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorobutanoic acid (PFBA)   | 4.1    | J         | 4.8 | 2.3  | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoropentanoic acid (PFPeA) | 5.7    |           | 1.9 | 0.47 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanoic acid (PFHxA)  | 12     |           | 1.9 | 0.55 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA) | 8.6    |           | 1.9 | 0.24 | ng/L | 1       |   | 537 (modified) | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Sacramento

# Detection Summary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

## Client Sample ID: 52-67 (Continued)

## Lab Sample ID: 320-83481-13

| Analyte                               | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|---------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorooctanoic acid (PFOA)         | 53     |           | 1.9 | 0.81 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorononanoic acid (PFNA)         | 1.3    | J         | 1.9 | 0.26 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorodecanoic acid (PFDA)         | 0.36   | J         | 1.9 | 0.30 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)   | 3.0    |           | 1.9 | 0.19 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS)  | 3.5    |           | 1.9 | 0.54 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanesulfonic Acid (PFHpS) | 0.71   | J         | 1.9 | 0.18 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)   | 33     |           | 1.9 | 0.52 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)     | 1.6    | J         | 1.9 | 0.94 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                   | 86     |           | 1.9 | 0.52 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 52-67-BLK

## Lab Sample ID: 320-83481-14

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

**Client Sample ID: 52-59**  
**Date Collected: 12/29/21 09:15**  
**Date Received: 12/30/21 10:35**

**Lab Sample ID: 320-83481-1**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result     | Qualifier  | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|------------|------------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND         |            | 4.8 | 2.3  | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND         |            | 1.9 | 0.47 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| <b>Perfluorohexanoic acid (PFHxA)</b>                    | <b>1.3</b> | <b>J</b>   | 1.9 | 0.56 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| <b>Perfluoroheptanoic acid (PFHpA)</b>                   | <b>1.6</b> | <b>J</b>   | 1.9 | 0.24 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>                     | <b>16</b>  |            | 1.9 | 0.82 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND         |            | 1.9 | 0.26 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND         |            | 1.9 | 0.30 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND         |            | 1.9 | 1.1  | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND         |            | 1.9 | 0.53 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND         |            | 1.9 | 1.3  | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND         |            | 1.9 | 0.71 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| <b>Perfluorobutanesulfonic acid (PFBS)</b>               | <b>1.7</b> | <b>J</b>   | 1.9 | 0.19 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| <b>Perfluorohexanesulfonic acid (PFHxS)</b>              | <b>2.6</b> |            | 1.9 | 0.55 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND         |            | 1.9 | 0.18 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| <b>Perfluorooctanesulfonic acid (PFOS)</b>               | <b>1.6</b> | <b>J I</b> | 1.9 | 0.52 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND         |            | 1.9 | 0.31 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| <b>Perfluorooctanesulfonamide (FOSA)</b>                 | <b>1.2</b> | <b>J</b>   | 1.9 | 0.95 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND         |            | 4.8 | 1.2  | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND         |            | 4.8 | 1.3  | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| 6:2 FTS  | ND         |            | 4.8 | 2.4  | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| 8:2 FTS  | ND         |            | 1.9 | 0.45 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>18</b>  |            | 1.9 | 0.52 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:45 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 101       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| 13C5 PFPeA       | 107       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| 13C2 PFHxA       | 110       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| 13C4 PFHpA       | 106       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| 13C4 PFOA        | 113       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| 13C5 PFNA        | 109       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| 13C2 PFDA        | 116       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| 13C2 PFUnA       | 111       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| 13C2 PFDoA       | 103       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| 13C2 PFTeDA      | 105       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| 13C3 PFBS        | 108       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| 18O2 PFHxS       | 95        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| 13C4 PFOS        | 98        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| 13C8 FOSA        | 97        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| d3-NMeFOSAA      | 108       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| d5-NEtFOSAA      | 112       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| M2-6:2 FTS       | 138       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:45 | 1       |
| M2-8:2 FTS       | 133       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:45 | 1       |

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

**Client Sample ID: 52-59-BLK**

**Lab Sample ID: 320-83481-2**

Date Collected: 12/29/21 09:20

Matrix: Water

Date Received: 12/30/21 10:35

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND     | H         | 4.7 | 2.2  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND     | H         | 1.9 | 0.46 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND     | H         | 1.9 | 0.54 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | ND     | H         | 1.9 | 0.23 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| Perfluorooctanoic acid (PFOA)                            | ND     | H         | 1.9 | 0.79 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND     | H         | 1.9 | 0.25 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND     | H         | 1.9 | 0.29 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND     | H         | 1.9 | 1.0  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND     | H         | 1.9 | 0.51 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND     | H         | 1.9 | 1.2  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND     | H         | 1.9 | 0.68 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | ND     | H         | 1.9 | 0.19 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | ND     | H         | 1.9 | 0.53 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND     | H         | 1.9 | 0.18 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | ND     | H         | 1.9 | 0.50 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND     | H         | 1.9 | 0.30 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND     | H         | 1.9 | 0.91 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND     | H         | 4.7 | 1.1  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND     | H         | 4.7 | 1.2  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| 6:2 FTS  | ND     | H         | 4.7 | 2.3  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| 8:2 FTS  | ND     | H         | 1.9 | 0.43 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| Total PFOA and PFOS                                      | ND     | H         | 1.9 | 0.50 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:37 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 87        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| 13C5 PFPeA       | 94        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| 13C2 PFHxA       | 92        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| 13C4 PFHpA       | 99        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| 13C4 PFOA        | 99        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| 13C5 PFNA        | 91        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| 13C2 PFDA        | 96        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| 13C2 PFUnA       | 95        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| 13C2 PFDoA       | 91        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| 13C2 PFTeDA      | 93        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| 13C3 PFBS        | 96        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| 18O2 PFHxS       | 93        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| 13C4 PFOS        | 97        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| 13C8 FOSA        | 91        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| d3-NMeFOSAA      | 91        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| d5-NEtFOSAA      | 92        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| M2-6:2 FTS       | 92        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:37 | 1       |
| M2-8:2 FTS       | 89        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:37 | 1       |

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

**Client Sample ID: W-1**

**Lab Sample ID: 320-83481-3**

Date Collected: 12/29/21 09:40

Matrix: Water

Date Received: 12/30/21 10:35

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte   | Result     | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---|------------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                             | 6.6        |           | 4.7 | 2.3  | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| Perfluoropentanoic acid (PFPeA)                           | 11         |           | 1.9 | 0.46 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| Perfluorohexanoic acid (PFHxA)                            | 25         |           | 1.9 | 0.55 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| Perfluoroheptanoic acid (PFHpA)                           | 20         |           | 1.9 | 0.24 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| Perfluorooctanoic acid (PFOA)                             | 120        |           | 1.9 | 0.81 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| Perfluorononanoic acid (PFNA)                             | 5.5        |           | 1.9 | 0.26 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| Perfluorodecanoic acid (PFDA)                             | 9.2        |           | 1.9 | 0.29 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| Perfluoroundecanoic acid (PFUnA)                          | ND         |           | 1.9 | 1.0  | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| Perfluorododecanoic acid (PFDoA)                          | 0.54       | J         | 1.9 | 0.52 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| Perfluorotridecanoic acid (PFTriA)                        | ND         |           | 1.9 | 1.2  | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                       | ND         |           | 1.9 | 0.69 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                       | 2.7        |           | 1.9 | 0.19 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                      | 7.3        |           | 1.9 | 0.54 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                     | 1.6        | J         | 1.9 | 0.18 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                       | 110        |           | 1.9 | 0.51 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                       | ND         |           | 1.9 | 0.30 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| Perfluorooctanesulfonamide (FOSA)                         | 15         |           | 1.9 | 0.93 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA) | 2.0        | J         | 4.7 | 1.1  | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)  | 150        |           | 4.7 | 1.2  | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| 6:2 FTS   | ND         |           | 4.7 | 2.4  | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| 8:2 FTS   | ND         |           | 1.9 | 0.44 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| <b>Total PFOA and PFOS</b>                                | <b>230</b> |           | 1.9 | 0.51 | ng/L |   | 01/04/22 12:25 | 01/07/22 01:56 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 93        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| 13C5 PFPeA       | 105       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| 13C2 PFHxA       | 104       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| 13C4 PFHpA       | 105       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| 13C4 PFOA        | 102       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| 13C5 PFNA        | 99        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| 13C2 PFDA        | 104       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| 13C2 PFUnA       | 105       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| 13C2 PFDoA       | 101       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| 13C2 PFTeDA      | 102       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| 13C3 PFBS        | 105       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| 18O2 PFHxS       | 92        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| 13C4 PFOS        | 92        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| 13C8 FOSA        | 91        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| d3-NMeFOSAA      | 101       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| d5-NEtFOSAA      | 100       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| M2-6:2 FTS       | 126       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:56 | 1       |
| M2-8:2 FTS       | 117       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 01:56 | 1       |

Eurofins Sacramento



# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

**Client Sample ID: W-1-BLK**

**Lab Sample ID: 320-83481-4**

**Date Collected: 12/29/21 09:45**

**Matrix: Water**

**Date Received: 12/30/21 10:35**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND     | H         | 4.7 | 2.3  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND     | H         | 1.9 | 0.46 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND     | H         | 1.9 | 0.55 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | ND     | H         | 1.9 | 0.24 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| Perfluorooctanoic acid (PFOA)                            | ND     | H         | 1.9 | 0.80 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND     | H         | 1.9 | 0.25 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND     | H         | 1.9 | 0.29 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND     | H         | 1.9 | 1.0  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND     | H         | 1.9 | 0.52 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND     | H         | 1.9 | 1.2  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND     | H         | 1.9 | 0.69 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | ND     | H         | 1.9 | 0.19 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | ND     | H         | 1.9 | 0.54 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND     | H         | 1.9 | 0.18 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | ND     | H         | 1.9 | 0.51 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND     | H         | 1.9 | 0.30 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND     | H         | 1.9 | 0.92 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND     | H         | 4.7 | 1.1  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND     | H         | 4.7 | 1.2  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| 6:2 FTS  | ND     | H         | 4.7 | 2.4  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| 8:2 FTS  | ND     | H         | 1.9 | 0.43 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| Total PFOA and PFOS                                      | ND     | H         | 1.9 | 0.51 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:47 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 93        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| 13C5 PFPeA       | 92        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| 13C2 PFHxA       | 95        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| 13C4 PFHpA       | 92        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| 13C4 PFOA        | 97        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| 13C5 PFNA        | 98        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| 13C2 PFDA        | 98        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| 13C2 PFUnA       | 97        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| 13C2 PFDoA       | 97        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| 13C2 PFTeDA      | 98        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| 13C3 PFBS        | 95        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| 18O2 PFHxS       | 93        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| 13C4 PFOS        | 99        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| 13C8 FOSA        | 91        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| d3-NMeFOSAA      | 94        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| d5-NEtFOSAA      | 97        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| M2-6:2 FTS       | 92        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:47 | 1       |
| M2-8:2 FTS       | 87        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:47 | 1       |

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

**Client Sample ID: 52-63**  
**Date Collected: 12/29/21 10:15**  
**Date Received: 12/30/21 10:35**

**Lab Sample ID: 320-83481-5**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result     | Qualifier  | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|------------|------------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND         |            | 4.8 | 2.3  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND         |            | 1.9 | 0.47 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| <b>Perfluorohexanoic acid (PFHxA)</b>                    | <b>1.7</b> | <b>J</b>   | 1.9 | 0.56 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| <b>Perfluoroheptanoic acid (PFHpA)</b>                   | <b>2.3</b> |            | 1.9 | 0.24 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>                     | <b>21</b>  |            | 1.9 | 0.82 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND         |            | 1.9 | 0.26 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND         |            | 1.9 | 0.30 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND         |            | 1.9 | 1.1  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND         |            | 1.9 | 0.53 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND         |            | 1.9 | 1.3  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND         |            | 1.9 | 0.70 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| <b>Perfluorobutanesulfonic acid (PFBS)</b>               | <b>2.3</b> |            | 1.9 | 0.19 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| <b>Perfluorohexanesulfonic acid (PFHxS)</b>              | <b>3.5</b> |            | 1.9 | 0.55 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND         |            | 1.9 | 0.18 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| <b>Perfluorooctanesulfonic acid (PFOS)</b>               | <b>1.6</b> | <b>J I</b> | 1.9 | 0.52 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND         |            | 1.9 | 0.31 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| <b>Perfluorooctanesulfonamide (FOSA)</b>                 | <b>1.5</b> | <b>J</b>   | 1.9 | 0.94 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND         |            | 4.8 | 1.2  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND         |            | 4.8 | 1.3  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| 6:2 FTS  | ND         |            | 4.8 | 2.4  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| 8:2 FTS  | ND         |            | 1.9 | 0.44 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>23</b>  |            | 1.9 | 0.52 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:06 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 89        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| 13C5 PFPeA       | 95        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| 13C2 PFHxA       | 95        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| 13C4 PFHpA       | 93        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| 13C4 PFOA        | 102       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| 13C5 PFNA        | 97        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| 13C2 PFDA        | 104       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| 13C2 PFUnA       | 103       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| 13C2 PFDoA       | 98        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| 13C2 PFTeDA      | 101       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| 13C3 PFBS        | 100       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| 18O2 PFHxS       | 87        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| 13C4 PFOS        | 88        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| 13C8 FOSA        | 91        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| d3-NMeFOSAA      | 100       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| d5-NEtFOSAA      | 103       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| M2-6:2 FTS       | 126       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:06 | 1       |
| M2-8:2 FTS       | 117       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:06 | 1       |

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

**Client Sample ID: 52-63-BLK**

**Lab Sample ID: 320-83481-6**

Date Collected: 12/29/21 10:20

Matrix: Water

Date Received: 12/30/21 10:35

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND     | H         | 4.6 | 2.2  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND     | H         | 1.8 | 0.45 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND     | H         | 1.8 | 0.54 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | ND     | H         | 1.8 | 0.23 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| Perfluorooctanoic acid (PFOA)                            | ND     | H         | 1.8 | 0.78 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND     | H         | 1.8 | 0.25 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND     | H         | 1.8 | 0.29 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND     | H         | 1.8 | 1.0  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND     | H         | 1.8 | 0.51 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND     | H         | 1.8 | 1.2  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND     | H         | 1.8 | 0.67 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | ND     | H         | 1.8 | 0.18 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | ND     | H         | 1.8 | 0.53 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND     | H         | 1.8 | 0.18 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | ND     | H         | 1.8 | 0.50 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND     | H         | 1.8 | 0.30 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND     | H         | 1.8 | 0.90 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND     | H         | 4.6 | 1.1  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND     | H         | 4.6 | 1.2  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| 6:2 FTS  | ND     | H         | 4.6 | 2.3  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| 8:2 FTS  | ND     | H         | 1.8 | 0.42 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| Total PFOA and PFOS                                      | ND     | H         | 1.8 | 0.50 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:57 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 89        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| 13C5 PFPeA       | 89        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| 13C2 PFHxA       | 90        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| 13C4 PFHpA       | 94        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| 13C4 PFOA        | 96        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| 13C5 PFNA        | 96        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| 13C2 PFDA        | 94        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| 13C2 PFUnA       | 92        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| 13C2 PFDoA       | 93        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| 13C2 PFTeDA      | 93        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| 13C3 PFBS        | 94        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| 18O2 PFHxS       | 92        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| 13C4 PFOS        | 92        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| 13C8 FOSA        | 91        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| d3-NMeFOSAA      | 88        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| d5-NEtFOSAA      | 93        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| M2-6:2 FTS       | 85        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:57 | 1       |
| M2-8:2 FTS       | 87        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:57 | 1       |

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

**Client Sample ID: 52-65**  
**Date Collected: 12/29/21 10:40**  
**Date Received: 12/30/21 10:35**

**Lab Sample ID: 320-83481-7**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result    | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|-----------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | 3.0       | J         | 4.9 | 2.4  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | 1.9       | J         | 2.0 | 0.48 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | 3.9       |           | 2.0 | 0.57 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | 3.2       |           | 2.0 | 0.25 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| Perfluorooctanoic acid (PFOA)                            | 36        |           | 2.0 | 0.84 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND        |           | 2.0 | 0.27 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND        |           | 2.0 | 0.31 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND        |           | 2.0 | 1.1  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND        |           | 2.0 | 0.54 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND        |           | 2.0 | 1.3  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND        |           | 2.0 | 0.72 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | 2.5       |           | 2.0 | 0.20 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | 3.9       |           | 2.0 | 0.56 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND        |           | 2.0 | 0.19 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | 9.1       | I         | 2.0 | 0.53 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND        |           | 2.0 | 0.32 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND        |           | 2.0 | 0.97 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND        |           | 4.9 | 1.2  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND        |           | 4.9 | 1.3  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| 6:2 FTS  | ND        |           | 4.9 | 2.5  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| 8:2 FTS  | ND        |           | 2.0 | 0.45 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>45</b> |           | 2.0 | 0.53 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:16 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 91        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| 13C5 PFPeA       | 98        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| 13C2 PFHxA       | 103       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| 13C4 PFHpA       | 111       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| 13C4 PFOA        | 106       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| 13C5 PFNA        | 101       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| 13C2 PFDA        | 103       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| 13C2 PFUnA       | 103       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| 13C2 PFDoA       | 94        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| 13C2 PFTeDA      | 102       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| 13C3 PFBS        | 101       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| 18O2 PFHxS       | 94        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| 13C4 PFOS        | 93        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| 13C8 FOSA        | 94        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| d3-NMeFOSAA      | 101       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| d5-NEtFOSAA      | 103       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| M2-6:2 FTS       | 130       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:16 | 1       |
| M2-8:2 FTS       | 130       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:16 | 1       |

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

**Client Sample ID: 52-65-BLK**

**Lab Sample ID: 320-83481-8**

**Date Collected: 12/29/21 10:45**

**Matrix: Water**

**Date Received: 12/30/21 10:35**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND     | H         | 4.7 | 2.2  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND     | H         | 1.9 | 0.46 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND     | H         | 1.9 | 0.54 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | ND     | H         | 1.9 | 0.23 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| Perfluorooctanoic acid (PFOA)                            | ND     | H         | 1.9 | 0.79 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND     | H         | 1.9 | 0.25 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND     | H         | 1.9 | 0.29 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND     | H         | 1.9 | 1.0  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND     | H         | 1.9 | 0.51 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND     | H         | 1.9 | 1.2  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND     | H         | 1.9 | 0.68 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | ND     | H         | 1.9 | 0.19 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | ND     | H         | 1.9 | 0.53 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND     | H         | 1.9 | 0.18 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | ND     | H         | 1.9 | 0.50 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND     | H         | 1.9 | 0.30 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND     | H         | 1.9 | 0.91 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND     | H         | 4.7 | 1.1  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND     | H         | 4.7 | 1.2  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| 6:2 FTS  | ND     | H         | 4.7 | 2.3  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| 8:2 FTS  | ND     | H         | 1.9 | 0.43 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| Total PFOA and PFOS                                      | ND     | H         | 1.9 | 0.50 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:07 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 95        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| 13C5 PFPeA       | 102       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| 13C2 PFHxA       | 100       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| 13C4 PFHpA       | 101       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| 13C4 PFOA        | 100       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| 13C5 PFNA        | 98        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| 13C2 PFDA        | 100       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| 13C2 PFUnA       | 104       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| 13C2 PFDoA       | 101       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| 13C2 PFTeDA      | 104       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| 13C3 PFBS        | 100       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| 18O2 PFHxS       | 96        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| 13C4 PFOS        | 96        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| 13C8 FOSA        | 97        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| d3-NMeFOSAA      | 98        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| d5-NEtFOSAA      | 103       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| M2-6:2 FTS       | 84        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:07 | 1       |
| M2-8:2 FTS       | 87        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:07 | 1       |

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

**Client Sample ID: 52-61**  
**Date Collected: 12/29/21 11:15**  
**Date Received: 12/30/21 10:35**

**Lab Sample ID: 320-83481-9**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result     | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|------------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND         |           | 4.9 | 2.3  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND         |           | 2.0 | 0.48 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| <b>Perfluorohexanoic acid (PFHxA)</b>                    | <b>1.9</b> | <b>J</b>  | 2.0 | 0.57 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| <b>Perfluoroheptanoic acid (PFHpA)</b>                   | <b>2.6</b> |           | 2.0 | 0.24 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>                     | <b>24</b>  |           | 2.0 | 0.83 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND         |           | 2.0 | 0.26 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND         |           | 2.0 | 0.30 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND         |           | 2.0 | 1.1  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND         |           | 2.0 | 0.54 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND         |           | 2.0 | 1.3  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND         |           | 2.0 | 0.71 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| <b>Perfluorobutanesulfonic acid (PFBS)</b>               | <b>2.2</b> |           | 2.0 | 0.20 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| <b>Perfluorohexanesulfonic acid (PFHxS)</b>              | <b>3.7</b> |           | 2.0 | 0.56 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND         |           | 2.0 | 0.19 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| <b>Perfluorooctanesulfonic acid (PFOS)</b>               | <b>2.5</b> | <b>I</b>  | 2.0 | 0.53 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND         |           | 2.0 | 0.31 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| <b>Perfluorooctanesulfonamide (FOSA)</b>                 | <b>3.8</b> |           | 2.0 | 0.96 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND         |           | 4.9 | 1.2  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND         |           | 4.9 | 1.3  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| 6:2 FTS  | ND         |           | 4.9 | 2.4  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| 8:2 FTS  | ND         |           | 2.0 | 0.45 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>27</b>  |           | 2.0 | 0.53 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:26 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 87        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| 13C5 PFPeA       | 101       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| 13C2 PFHxA       | 98        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| 13C4 PFHpA       | 99        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| 13C4 PFOA        | 103       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| 13C5 PFNA        | 98        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| 13C2 PFDA        | 102       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| 13C2 PFUnA       | 103       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| 13C2 PFDoA       | 98        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| 13C2 PFTeDA      | 102       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| 13C3 PFBS        | 105       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| 18O2 PFHxS       | 89        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| 13C4 PFOS        | 93        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| 13C8 FOSA        | 93        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| d3-NMeFOSAA      | 104       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| d5-NEtFOSAA      | 107       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| M2-6:2 FTS       | 129       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:26 | 1       |
| M2-8:2 FTS       | 121       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:26 | 1       |

Eurofins Sacramento



# Client Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

**Client Sample ID: 52-61-BLK**

**Lab Sample ID: 320-83481-10**

**Date Collected: 12/29/21 11:20**

**Matrix: Water**

**Date Received: 12/30/21 10:35**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND     | H         | 4.7 | 2.2  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND     | H         | 1.9 | 0.46 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND     | H         | 1.9 | 0.54 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | ND     | H         | 1.9 | 0.23 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| Perfluorooctanoic acid (PFOA)                            | ND     | H         | 1.9 | 0.79 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND     | H         | 1.9 | 0.25 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND     | H         | 1.9 | 0.29 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND     | H         | 1.9 | 1.0  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND     | H         | 1.9 | 0.51 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND     | H         | 1.9 | 1.2  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND     | H         | 1.9 | 0.68 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | ND     | H         | 1.9 | 0.19 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | ND     | H         | 1.9 | 0.53 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND     | H         | 1.9 | 0.18 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | ND     | H         | 1.9 | 0.50 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND     | H         | 1.9 | 0.30 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND     | H         | 1.9 | 0.92 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND     | H         | 4.7 | 1.1  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND     | H         | 4.7 | 1.2  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| 6:2 FTS  | ND     | H         | 4.7 | 2.3  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| 8:2 FTS  | ND     | H         | 1.9 | 0.43 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| Total PFOA and PFOS                                      | ND     | H         | 1.9 | 0.50 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:17 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 96        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| 13C5 PFPeA       | 103       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| 13C2 PFHxA       | 99        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| 13C4 PFHpA       | 101       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| 13C4 PFOA        | 103       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| 13C5 PFNA        | 102       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| 13C2 PFDA        | 101       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| 13C2 PFUnA       | 100       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| 13C2 PFDoA       | 97        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| 13C2 PFTeDA      | 102       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| 13C3 PFBS        | 95        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| 18O2 PFHxS       | 95        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| 13C4 PFOS        | 100       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| 13C8 FOSA        | 96        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| d3-NMeFOSAA      | 93        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| d5-NEtFOSAA      | 102       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| M2-6:2 FTS       | 89        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:17 | 1       |
| M2-8:2 FTS       | 83        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:17 | 1       |

Eurofins Sacramento



# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

**Client Sample ID: 46-63**  
**Date Collected: 12/29/21 11:45**  
**Date Received: 12/30/21 10:35**

**Lab Sample ID: 320-83481-11**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result    | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|-----------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | 2.4       | J         | 4.7 | 2.3  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | 1.4       | J         | 1.9 | 0.47 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | 3.5       |           | 1.9 | 0.55 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | 3.1       |           | 1.9 | 0.24 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| Perfluorooctanoic acid (PFOA)                            | 22        |           | 1.9 | 0.81 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND        |           | 1.9 | 0.26 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND        |           | 1.9 | 0.29 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND        |           | 1.9 | 1.0  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND        |           | 1.9 | 0.52 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND        |           | 1.9 | 1.2  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND        |           | 1.9 | 0.69 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | 1.7       | J         | 1.9 | 0.19 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | 1.8       | J         | 1.9 | 0.54 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND        |           | 1.9 | 0.18 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | 3.8       |           | 1.9 | 0.51 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND        |           | 1.9 | 0.30 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | 1.7       | J         | 1.9 | 0.93 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND        |           | 4.7 | 1.1  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND        |           | 4.7 | 1.2  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| 6:2 FTS  | ND        |           | 4.7 | 2.4  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| 8:2 FTS  | ND        |           | 1.9 | 0.44 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>26</b> |           | 1.9 | 0.51 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:36 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 92        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| 13C5 PFPeA       | 96        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| 13C2 PFHxA       | 100       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| 13C4 PFHpA       | 101       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| 13C4 PFOA        | 103       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| 13C5 PFNA        | 96        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| 13C2 PFDA        | 101       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| 13C2 PFUnA       | 105       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| 13C2 PFDoA       | 91        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| 13C2 PFTeDA      | 100       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| 13C3 PFBS        | 101       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| 18O2 PFHxS       | 87        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| 13C4 PFOS        | 91        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| 13C8 FOSA        | 94        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| d3-NMeFOSAA      | 98        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| d5-NEtFOSAA      | 104       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| M2-6:2 FTS       | 130       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:36 | 1       |
| M2-8:2 FTS       | 113       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:36 | 1       |

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

**Client Sample ID: 46-63-BLK**

**Lab Sample ID: 320-83481-12**

**Date Collected: 12/29/21 11:50**

**Matrix: Water**

**Date Received: 12/30/21 10:35**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND     | H         | 4.6 | 2.2  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND     | H         | 1.8 | 0.45 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND     | H         | 1.8 | 0.54 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | ND     | H         | 1.8 | 0.23 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| Perfluorooctanoic acid (PFOA)                            | ND     | H         | 1.8 | 0.79 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND     | H         | 1.8 | 0.25 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND     | H         | 1.8 | 0.29 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND     | H         | 1.8 | 1.0  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND     | H         | 1.8 | 0.51 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND     | H         | 1.8 | 1.2  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND     | H         | 1.8 | 0.68 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | ND     | H         | 1.8 | 0.18 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | ND     | H         | 1.8 | 0.53 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND     | H         | 1.8 | 0.18 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | ND     | H         | 1.8 | 0.50 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND     | H         | 1.8 | 0.30 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND     | H         | 1.8 | 0.91 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND     | H         | 4.6 | 1.1  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND     | H         | 4.6 | 1.2  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| 6:2 FTS  | ND     | H         | 4.6 | 2.3  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| 8:2 FTS  | ND     | H         | 1.8 | 0.43 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| Total PFOA and PFOS                                      | ND     | H         | 1.8 | 0.50 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:27 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 97        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| 13C5 PFPeA       | 100       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| 13C2 PFHxA       | 100       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| 13C4 PFHpA       | 96        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| 13C4 PFOA        | 100       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| 13C5 PFNA        | 100       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| 13C2 PFDA        | 100       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| 13C2 PFUnA       | 104       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| 13C2 PFDoA       | 101       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| 13C2 PFTeDA      | 102       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| 13C3 PFBS        | 99        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| 18O2 PFHxS       | 98        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| 13C4 PFOS        | 104       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| 13C8 FOSA        | 97        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| d3-NMeFOSAA      | 96        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| d5-NEtFOSAA      | 103       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| M2-6:2 FTS       | 87        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:27 | 1       |
| M2-8:2 FTS       | 90        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:27 | 1       |

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

**Client Sample ID: 52-67**  
**Date Collected: 12/29/21 12:15**  
**Date Received: 12/30/21 10:35**

**Lab Sample ID: 320-83481-13**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result    | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|-----------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | 4.1       | J         | 4.8 | 2.3  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | 5.7       |           | 1.9 | 0.47 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | 12        |           | 1.9 | 0.55 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | 8.6       |           | 1.9 | 0.24 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| Perfluorooctanoic acid (PFOA)                            | 53        |           | 1.9 | 0.81 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| Perfluorononanoic acid (PFNA)                            | 1.3       | J         | 1.9 | 0.26 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| Perfluorodecanoic acid (PFDA)                            | 0.36      | J         | 1.9 | 0.30 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND        |           | 1.9 | 1.1  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND        |           | 1.9 | 0.53 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND        |           | 1.9 | 1.2  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND        |           | 1.9 | 0.70 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | 3.0       |           | 1.9 | 0.19 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | 3.5       |           | 1.9 | 0.54 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 0.71      | J         | 1.9 | 0.18 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | 33        |           | 1.9 | 0.52 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND        |           | 1.9 | 0.31 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | 1.6       | J         | 1.9 | 0.94 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND        |           | 4.8 | 1.1  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND        |           | 4.8 | 1.2  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| 6:2 FTS  | ND        |           | 4.8 | 2.4  | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| 8:2 FTS  | ND        |           | 1.9 | 0.44 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>86</b> |           | 1.9 | 0.52 | ng/L |   | 01/04/22 12:25 | 01/07/22 02:46 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 92        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| 13C5 PFPeA       | 107       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| 13C2 PFHxA       | 105       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| 13C4 PFHpA       | 107       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| 13C4 PFOA        | 108       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| 13C5 PFNA        | 104       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| 13C2 PFDA        | 108       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| 13C2 PFUnA       | 111       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| 13C2 PFDoA       | 102       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| 13C2 PFTeDA      | 106       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| 13C3 PFBS        | 110       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| 18O2 PFHxS       | 90        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| 13C4 PFOS        | 96        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| 13C8 FOSA        | 93        |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| d3-NMeFOSAA      | 100       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| d5-NEtFOSAA      | 110       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| M2-6:2 FTS       | 131       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:46 | 1       |
| M2-8:2 FTS       | 136       |           | 25 - 150 | 01/04/22 12:25 | 01/07/22 02:46 | 1       |

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

**Client Sample ID: 52-67-BLK**

**Lab Sample ID: 320-83481-14**

**Date Collected: 12/29/21 12:20**

**Matrix: Water**

**Date Received: 12/30/21 10:35**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND     | H         | 4.7 | 2.2  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND     | H         | 1.9 | 0.46 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND     | H         | 1.9 | 0.54 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | ND     | H         | 1.9 | 0.23 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| Perfluorooctanoic acid (PFOA)                            | ND     | H         | 1.9 | 0.80 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND     | H         | 1.9 | 0.25 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND     | H         | 1.9 | 0.29 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND     | H         | 1.9 | 1.0  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND     | H         | 1.9 | 0.52 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND     | H         | 1.9 | 1.2  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND     | H         | 1.9 | 0.68 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | ND     | H         | 1.9 | 0.19 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | ND     | H         | 1.9 | 0.53 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND     | H         | 1.9 | 0.18 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | ND     | H         | 1.9 | 0.51 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND     | H         | 1.9 | 0.30 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND     | H         | 1.9 | 0.92 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND     | H         | 4.7 | 1.1  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND     | H         | 4.7 | 1.2  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| 6:2 FTS  | ND     | H         | 4.7 | 2.3  | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| 8:2 FTS  | ND     | H         | 1.9 | 0.43 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| Total PFOA and PFOS                                      | ND     | H         | 1.9 | 0.51 | ng/L |   | 01/15/22 06:05 | 01/16/22 00:38 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 102       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| 13C5 PFPeA       | 107       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| 13C2 PFHxA       | 101       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| 13C4 PFHpA       | 106       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| 13C4 PFOA        | 105       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| 13C5 PFNA        | 109       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| 13C2 PFDA        | 109       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| 13C2 PFUnA       | 106       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| 13C2 PFDoA       | 101       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| 13C2 PFTeDA      | 106       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| 13C3 PFBS        | 106       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| 18O2 PFHxS       | 102       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| 13C4 PFOS        | 109       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| 13C8 FOSA        | 103       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| d3-NMeFOSAA      | 99        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| d5-NEtFOSAA      | 107       |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| M2-6:2 FTS       | 96        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:38 | 1       |
| M2-8:2 FTS       | 94        |           | 25 - 150 | 01/15/22 06:05 | 01/16/22 00:38 | 1       |

Eurofins Sacramento

# Isotope Dilution Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID       | Client Sample ID       | PFBA<br>(25-150) | PFPeA<br>(25-150) | PFHxA<br>(25-150) | C4PFHA<br>(25-150) | PFOA<br>(25-150) | PFNA<br>(25-150) | PFDA<br>(25-150) | PFUnA<br>(25-150) |
|---------------------|------------------------|------------------|-------------------|-------------------|--------------------|------------------|------------------|------------------|-------------------|
| 320-83481-1         | 52-59                  | 101              | 107               | 110               | 106                | 113              | 109              | 116              | 111               |
| 320-83481-2         | 52-59-BLK              | 87               | 94                | 92                | 99                 | 99               | 91               | 96               | 95                |
| 320-83481-3         | W-1                    | 93               | 105               | 104               | 105                | 102              | 99               | 104              | 105               |
| 320-83481-4         | W-1-BLK                | 93               | 92                | 95                | 92                 | 97               | 98               | 98               | 97                |
| 320-83481-5         | 52-63                  | 89               | 95                | 95                | 93                 | 102              | 97               | 104              | 103               |
| 320-83481-6         | 52-63-BLK              | 89               | 89                | 90                | 94                 | 96               | 96               | 94               | 92                |
| 320-83481-7         | 52-65                  | 91               | 98                | 103               | 111                | 106              | 101              | 103              | 103               |
| 320-83481-8         | 52-65-BLK              | 95               | 102               | 100               | 101                | 100              | 98               | 100              | 104               |
| 320-83481-9         | 52-61                  | 87               | 101               | 98                | 99                 | 103              | 98               | 102              | 103               |
| 320-83481-10        | 52-61-BLK              | 96               | 103               | 99                | 101                | 103              | 102              | 101              | 100               |
| 320-83481-11        | 46-63                  | 92               | 96                | 100               | 101                | 103              | 96               | 101              | 105               |
| 320-83481-12        | 46-63-BLK              | 97               | 100               | 100               | 96                 | 100              | 100              | 100              | 104               |
| 320-83481-13        | 52-67                  | 92               | 107               | 105               | 107                | 108              | 104              | 108              | 111               |
| 320-83481-14        | 52-67-BLK              | 102              | 107               | 101               | 106                | 105              | 109              | 109              | 106               |
| LCS 320-555892/2-A  | Lab Control Sample     | 94               | 95                | 104               | 109                | 101              | 104              | 103              | 111               |
| LCS 320-558205/2-A  | Lab Control Sample     | 92               | 102               | 97                | 96                 | 101              | 103              | 99               | 102               |
| LCSD 320-555892/3-A | Lab Control Sample Dup | 90               | 100               | 104               | 105                | 105              | 104              | 106              | 107               |
| LCSD 320-558205/3-A | Lab Control Sample Dup | 96               | 98                | 96                | 104                | 99               | 100              | 105              | 103               |
| MB 320-555892/1-A   | Method Blank           | 87               | 99                | 94                | 99                 | 103              | 99               | 102              | 102               |
| MB 320-558205/1-A   | Method Blank           | 91               | 97                | 85                | 92                 | 94               | 96               | 94               | 97                |

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID       | Client Sample ID       | PFDaA<br>(25-150) | PFTDA<br>(25-150) | C3PFBS<br>(25-150) | PFHxS<br>(25-150) | PFOS<br>(25-150) | PFOSA<br>(25-150) | d3NMFOS<br>(25-150) | d5NEFOS<br>(25-150) |
|---------------------|------------------------|-------------------|-------------------|--------------------|-------------------|------------------|-------------------|---------------------|---------------------|
| 320-83481-1         | 52-59                  | 103               | 105               | 108                | 95                | 98               | 97                | 108                 | 112                 |
| 320-83481-2         | 52-59-BLK              | 91                | 93                | 96                 | 93                | 97               | 91                | 91                  | 92                  |
| 320-83481-3         | W-1                    | 101               | 102               | 105                | 92                | 92               | 91                | 101                 | 100                 |
| 320-83481-4         | W-1-BLK                | 97                | 98                | 95                 | 93                | 99               | 91                | 94                  | 97                  |
| 320-83481-5         | 52-63                  | 98                | 101               | 100                | 87                | 88               | 91                | 100                 | 103                 |
| 320-83481-6         | 52-63-BLK              | 93                | 93                | 94                 | 92                | 92               | 91                | 88                  | 93                  |
| 320-83481-7         | 52-65                  | 94                | 102               | 101                | 94                | 93               | 94                | 101                 | 103                 |
| 320-83481-8         | 52-65-BLK              | 101               | 104               | 100                | 96                | 96               | 97                | 98                  | 103                 |
| 320-83481-9         | 52-61                  | 98                | 102               | 105                | 89                | 93               | 93                | 104                 | 107                 |
| 320-83481-10        | 52-61-BLK              | 97                | 102               | 95                 | 95                | 100              | 96                | 93                  | 102                 |
| 320-83481-11        | 46-63                  | 91                | 100               | 101                | 87                | 91               | 94                | 98                  | 104                 |
| 320-83481-12        | 46-63-BLK              | 101               | 102               | 99                 | 98                | 104              | 97                | 96                  | 103                 |
| 320-83481-13        | 52-67                  | 102               | 106               | 110                | 90                | 96               | 93                | 100                 | 110                 |
| 320-83481-14        | 52-67-BLK              | 101               | 106               | 106                | 102               | 109              | 103               | 99                  | 107                 |
| LCS 320-555892/2-A  | Lab Control Sample     | 103               | 106               | 101                | 91                | 95               | 93                | 102                 | 107                 |
| LCS 320-558205/2-A  | Lab Control Sample     | 97                | 104               | 95                 | 92                | 99               | 93                | 96                  | 95                  |
| LCSD 320-555892/3-A | Lab Control Sample Dup | 98                | 97                | 104                | 88                | 91               | 89                | 100                 | 108                 |
| LCSD 320-558205/3-A | Lab Control Sample Dup | 102               | 103               | 95                 | 93                | 97               | 98                | 98                  | 104                 |
| MB 320-555892/1-A   | Method Blank           | 98                | 100               | 100                | 90                | 92               | 88                | 103                 | 110                 |
| MB 320-558205/1-A   | Method Blank           | 94                | 97                | 93                 | 89                | 90               | 92                | 93                  | 100                 |

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID | Client Sample ID | M262FTS<br>(25-150) | M282FTS<br>(25-150) |
|---------------|------------------|---------------------|---------------------|
| 320-83481-1   | 52-59            | 138                 | 133                 |
| 320-83481-2   | 52-59-BLK        | 92                  | 89                  |
| 320-83481-3   | W-1              | 126                 | 117                 |

Eurofins Sacramento

# Isotope Dilution Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID       | Client Sample ID       | M262FTS<br>(25-150) | M282FTS<br>(25-150) |
|---------------------|------------------------|---------------------|---------------------|
| 320-83481-4         | W-1-BLK                | 92                  | 87                  |
| 320-83481-5         | 52-63                  | 126                 | 117                 |
| 320-83481-6         | 52-63-BLK              | 85                  | 87                  |
| 320-83481-7         | 52-65                  | 130                 | 130                 |
| 320-83481-8         | 52-65-BLK              | 84                  | 87                  |
| 320-83481-9         | 52-61                  | 129                 | 121                 |
| 320-83481-10        | 52-61-BLK              | 89                  | 83                  |
| 320-83481-11        | 46-63                  | 130                 | 113                 |
| 320-83481-12        | 46-63-BLK              | 87                  | 90                  |
| 320-83481-13        | 52-67                  | 131                 | 136                 |
| 320-83481-14        | 52-67-BLK              | 96                  | 94                  |
| LCS 320-555892/2-A  | Lab Control Sample     | 138                 | 127                 |
| LCS 320-558205/2-A  | Lab Control Sample     | 86                  | 85                  |
| LCSD 320-555892/3-A | Lab Control Sample Dup | 129                 | 124                 |
| LCSD 320-558205/3-A | Lab Control Sample Dup | 84                  | 91                  |
| MB 320-555892/1-A   | Method Blank           | 127                 | 121                 |
| MB 320-558205/1-A   | Method Blank           | 86                  | 81                  |

#### Surrogate Legend

- PFBA = 13C4 PFBA
- PFPeA = 13C5 PFPeA
- PFHxA = 13C2 PFHxA
- C4PFHA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFUnA = 13C2 PFUnA
- PFDoA = 13C2 PFDoA
- PFTDA = 13C2 PFTeDA
- C3PFBS = 13C3 PFBS
- PFHxS = 18O2 PFHxS
- PFOS = 13C4 PFOS
- PFOSA = 13C8 FOSA
- d3NMFOS = d3-NMeFOSAA
- d5NEFOS = d5-NEtFOSAA
- M262FTS = M2-6:2 FTS
- M282FTS = M2-8:2 FTS

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

**Lab Sample ID: MB 320-555892/1-A**  
**Matrix: Water**  
**Analysis Batch: 556555**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 555892**

| Analyte  | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|  | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluorobutanoic acid (PFBA)                            | ND     |           | 5.0 | 2.4  | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND     |           | 2.0 | 0.49 | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND     |           | 2.0 | 0.58 | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | ND     |           | 2.0 | 0.25 | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| Perfluorooctanoic acid (PFOA)                            | ND     |           | 2.0 | 0.85 | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND     |           | 2.0 | 0.27 | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND     |           | 2.0 | 0.31 | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND     |           | 2.0 | 1.1  | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND     |           | 2.0 | 0.55 | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND     |           | 2.0 | 1.3  | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND     |           | 2.0 | 0.73 | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | ND     |           | 2.0 | 0.20 | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | ND     |           | 2.0 | 0.57 | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND     |           | 2.0 | 0.19 | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | ND     |           | 2.0 | 0.54 | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND     |           | 2.0 | 0.32 | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND     |           | 2.0 | 0.98 | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND     |           | 5.0 | 1.2  | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND     |           | 5.0 | 1.3  | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| 6:2 FTS  | ND     |           | 5.0 | 2.5  | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| 8:2 FTS  | ND     |           | 2.0 | 0.46 | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| Total PFOA and PFOS                                      | ND     |           | 2.0 | 0.54 | ng/L |   | 01/04/22 12:25 | 01/06/22 23:34 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFBA        | 87        |           | 25 - 150 | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| 13C5 PFPeA       | 99        |           | 25 - 150 | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| 13C2 PFHxA       | 94        |           | 25 - 150 | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| 13C4 PFHpA       | 99        |           | 25 - 150 | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| 13C4 PFOA        | 103       |           | 25 - 150 | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| 13C5 PFNA        | 99        |           | 25 - 150 | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| 13C2 PFDA        | 102       |           | 25 - 150 | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| 13C2 PFUnA       | 102       |           | 25 - 150 | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| 13C2 PFDoA       | 98        |           | 25 - 150 | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| 13C2 PFTeDA      | 100       |           | 25 - 150 | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| 13C3 PFBS        | 100       |           | 25 - 150 | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| 18O2 PFHxS       | 90        |           | 25 - 150 | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| 13C4 PFOS        | 92        |           | 25 - 150 | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| 13C8 FOSA        | 88        |           | 25 - 150 | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| d3-NMeFOSAA      | 103       |           | 25 - 150 | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| d5-NEtFOSAA      | 110       |           | 25 - 150 | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| M2-6:2 FTS       | 127       |           | 25 - 150 | 01/04/22 12:25 | 01/06/22 23:34 | 1       |
| M2-8:2 FTS       | 121       |           | 25 - 150 | 01/04/22 12:25 | 01/06/22 23:34 | 1       |



# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-555892/2-A**  
**Matrix: Water**  
**Analysis Batch: 556555**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 555892**

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|--|-------------|------------|---------------|------|---|------|--------------|
| Perfluorobutanoic acid (PFBA)                            | 40.0        | 39.2       |               | ng/L |   | 98   | 76 - 136     |
| Perfluoropentanoic acid (PFPeA)                          | 40.0        | 38.5       |               | ng/L |   | 96   | 71 - 131     |
| Perfluorohexanoic acid (PFHxA)                           | 40.0        | 39.3       |               | ng/L |   | 98   | 73 - 133     |
| Perfluoroheptanoic acid (PFHpA)                          | 40.0        | 35.3       |               | ng/L |   | 88   | 72 - 132     |
| Perfluorooctanoic acid (PFOA)                            | 40.0        | 39.6       |               | ng/L |   | 99   | 70 - 130     |
| Perfluorononanoic acid (PFNA)                            | 40.0        | 37.0       |               | ng/L |   | 93   | 75 - 135     |
| Perfluorodecanoic acid (PFDA)                            | 40.0        | 40.2       |               | ng/L |   | 100  | 76 - 136     |
| Perfluoroundecanoic acid (PFUnA)                         | 40.0        | 38.0       |               | ng/L |   | 95   | 68 - 128     |
| Perfluorododecanoic acid (PFDoA)                         | 40.0        | 37.1       |               | ng/L |   | 93   | 71 - 131     |
| Perfluorotridecanoic acid (PFTriA)                       | 40.0        | 40.4       |               | ng/L |   | 101  | 71 - 131     |
| Perfluorotetradecanoic acid (PFTeA)                      | 40.0        | 36.6       |               | ng/L |   | 91   | 70 - 130     |
| Perfluorobutanesulfonic acid (PFBS)                      | 35.4        | 31.7       |               | ng/L |   | 90   | 67 - 127     |
| Perfluorohexanesulfonic acid (PFHxS)                     | 36.4        | 33.5       |               | ng/L |   | 92   | 59 - 119     |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 38.1        | 38.0       |               | ng/L |   | 100  | 76 - 136     |
| Perfluorooctanesulfonic acid (PFOS)                      | 37.1        | 34.5       |               | ng/L |   | 93   | 70 - 130     |
| Perfluorodecanesulfonic acid (PFDS)                      | 38.6        | 36.6       |               | ng/L |   | 95   | 71 - 131     |
| Perfluorooctanesulfonamide (FOSA)                        | 40.0        | 38.2       |               | ng/L |   | 96   | 73 - 133     |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 40.0        | 40.9       |               | ng/L |   | 102  | 76 - 136     |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | 40.0        | 38.7       |               | ng/L |   | 97   | 76 - 136     |
| 6:2 FTS  | 37.9        | 37.6       |               | ng/L |   | 99   | 59 - 175     |
| 8:2 FTS  | 38.3        | 38.5       |               | ng/L |   | 100  | 75 - 135     |

| Isotope Dilution | LCS LCS   |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFBA        | 94        |           | 25 - 150 |
| 13C5 PFPeA       | 95        |           | 25 - 150 |
| 13C2 PFHxA       | 104       |           | 25 - 150 |
| 13C4 PFHpA       | 109       |           | 25 - 150 |
| 13C4 PFOA        | 101       |           | 25 - 150 |
| 13C5 PFNA        | 104       |           | 25 - 150 |
| 13C2 PFDA        | 103       |           | 25 - 150 |
| 13C2 PFUnA       | 111       |           | 25 - 150 |
| 13C2 PFDoA       | 103       |           | 25 - 150 |
| 13C2 PFTeA       | 106       |           | 25 - 150 |
| 13C3 PFBS        | 101       |           | 25 - 150 |
| 18O2 PFHxS       | 91        |           | 25 - 150 |
| 13C4 PFOS        | 95        |           | 25 - 150 |
| 13C8 FOSA        | 93        |           | 25 - 150 |
| d3-NMeFOSAA      | 102       |           | 25 - 150 |
| d5-NEtFOSAA      | 107       |           | 25 - 150 |

Eurofins Sacramento

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-555892/2-A**  
**Matrix: Water**  
**Analysis Batch: 556555**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 555892**

| <i>Isotope Dilution</i> | <i>LCS LCS</i>   |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| M2-6:2 FTS              | 138              |                  | 25 - 150      |
| M2-8:2 FTS              | 127              |                  | 25 - 150      |

**Lab Sample ID: LCSD 320-555892/3-A**  
**Matrix: Water**  
**Analysis Batch: 556555**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 555892**

| <i>Analyte</i>   | <i>Spike Added</i> | <i>LCSD Result</i> | <i>LCSD Qualifier</i> | <i>Unit</i> | <i>D</i> | <i>%Rec</i> | <i>%Rec.</i>  |            | <i>RPD</i> | <i>RPD Limit</i> |
|--|--------------------|--------------------|-----------------------|-------------|----------|-------------|---------------|------------|------------|------------------|
|  |                    |                    |                       |             |          |             | <i>Limits</i> | <i>RPD</i> |            |                  |
| Perfluorobutanoic acid (PFBA)                            | 40.0               | 42.1               |                       | ng/L        |          | 105         | 76 - 136      | 7          | 30         |                  |
| Perfluoropentanoic acid (PFPeA)                          | 40.0               | 35.1               |                       | ng/L        |          | 88          | 71 - 131      | 9          | 30         |                  |
| Perfluorohexanoic acid (PFHxA)                           | 40.0               | 38.6               |                       | ng/L        |          | 97          | 73 - 133      | 2          | 30         |                  |
| Perfluoroheptanoic acid (PFHpA)                          | 40.0               | 37.1               |                       | ng/L        |          | 93          | 72 - 132      | 5          | 30         |                  |
| Perfluorooctanoic acid (PFOA)                            | 40.0               | 36.7               |                       | ng/L        |          | 92          | 70 - 130      | 7          | 30         |                  |
| Perfluorononanoic acid (PFNA)                            | 40.0               | 37.1               |                       | ng/L        |          | 93          | 75 - 135      | 0          | 30         |                  |
| Perfluorodecanoic acid (PFDA)                            | 40.0               | 39.9               |                       | ng/L        |          | 100         | 76 - 136      | 1          | 30         |                  |
| Perfluoroundecanoic acid (PFUnA)                         | 40.0               | 39.8               |                       | ng/L        |          | 100         | 68 - 128      | 5          | 30         |                  |
| Perfluorododecanoic acid (PFDoA)                         | 40.0               | 38.2               |                       | ng/L        |          | 95          | 71 - 131      | 3          | 30         |                  |
| Perfluorotridecanoic acid (PFTriA)                       | 40.0               | 41.6               |                       | ng/L        |          | 104         | 71 - 131      | 3          | 30         |                  |
| Perfluorotetradecanoic acid (PFTeA)                      | 40.0               | 37.0               |                       | ng/L        |          | 93          | 70 - 130      | 1          | 30         |                  |
| Perfluorobutanesulfonic acid (PFBS)                      | 35.4               | 28.9               |                       | ng/L        |          | 82          | 67 - 127      | 9          | 30         |                  |
| Perfluorohexanesulfonic acid (PFHxS)                     | 36.4               | 34.1               |                       | ng/L        |          | 94          | 59 - 119      | 2          | 30         |                  |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 38.1               | 38.1               |                       | ng/L        |          | 100         | 76 - 136      | 0          | 30         |                  |
| Perfluorooctanesulfonic acid (PFOS)                      | 37.1               | 35.7               |                       | ng/L        |          | 96          | 70 - 130      | 3          | 30         |                  |
| Perfluorodecanesulfonic acid (PFDS)                      | 38.6               | 35.4               |                       | ng/L        |          | 92          | 71 - 131      | 3          | 30         |                  |
| Perfluorooctanesulfonamide (FOSA)                        | 40.0               | 40.1               |                       | ng/L        |          | 100         | 73 - 133      | 5          | 30         |                  |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 40.0               | 42.0               |                       | ng/L        |          | 105         | 76 - 136      | 3          | 30         |                  |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | 40.0               | 37.8               |                       | ng/L        |          | 95          | 76 - 136      | 2          | 30         |                  |
| 6:2 FTS  | 37.9               | 39.3               |                       | ng/L        |          | 104         | 59 - 175      | 5          | 30         |                  |
| 8:2 FTS  | 38.3               | 40.1               |                       | ng/L        |          | 105         | 75 - 135      | 4          | 30         |                  |

| <i>Isotope Dilution</i> | <i>LCSD LCSD</i> |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFBA               | 90               |                  | 25 - 150      |
| 13C5 PFPeA              | 100              |                  | 25 - 150      |
| 13C2 PFHxA              | 104              |                  | 25 - 150      |
| 13C4 PFHpA              | 105              |                  | 25 - 150      |
| 13C4 PFOA               | 105              |                  | 25 - 150      |
| 13C5 PFNA               | 104              |                  | 25 - 150      |
| 13C2 PFDA               | 106              |                  | 25 - 150      |
| 13C2 PFUnA              | 107              |                  | 25 - 150      |
| 13C2 PFDoA              | 98               |                  | 25 - 150      |

Eurofins Sacramento

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCSD 320-555892/3-A**  
**Matrix: Water**  
**Analysis Batch: 556555**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 555892**

| Isotope Dilution | LCSD LCSD |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C2 PFTeDA      | 97        |           | 25 - 150 |
| 13C3 PFBS        | 104       |           | 25 - 150 |
| 18O2 PFHxS       | 88        |           | 25 - 150 |
| 13C4 PFOS        | 91        |           | 25 - 150 |
| 13C8 FOSA        | 89        |           | 25 - 150 |
| d3-NMeFOSAA      | 100       |           | 25 - 150 |
| d5-NEtFOSAA      | 108       |           | 25 - 150 |
| M2-6:2 FTS       | 129       |           | 25 - 150 |
| M2-8:2 FTS       | 124       |           | 25 - 150 |

**Lab Sample ID: MB 320-558205/1-A**  
**Matrix: Water**  
**Analysis Batch: 558233**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 558205**

| Analyte  | MB MB  |           | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|  | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluorobutanoic acid (PFBA)                            | ND     |           | 5.0 | 2.4  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND     |           | 2.0 | 0.49 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND     |           | 2.0 | 0.58 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | ND     |           | 2.0 | 0.25 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| Perfluorooctanoic acid (PFOA)                            | ND     |           | 2.0 | 0.85 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND     |           | 2.0 | 0.27 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND     |           | 2.0 | 0.31 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND     |           | 2.0 | 1.1  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND     |           | 2.0 | 0.55 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND     |           | 2.0 | 1.3  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND     |           | 2.0 | 0.73 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | ND     |           | 2.0 | 0.20 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | ND     |           | 2.0 | 0.57 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND     |           | 2.0 | 0.19 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | ND     |           | 2.0 | 0.54 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND     |           | 2.0 | 0.32 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND     |           | 2.0 | 0.98 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND     |           | 5.0 | 1.2  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND     |           | 5.0 | 1.3  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| 6:2 FTS  | ND     |           | 5.0 | 2.5  | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| 8:2 FTS  | ND     |           | 2.0 | 0.46 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| Total PFOA and PFOS                                      | ND     |           | 2.0 | 0.54 | ng/L |   | 01/15/22 06:05 | 01/15/22 23:06 | 1       |

| Isotope Dilution | MB MB     |           | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFBA        | 91        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| 13C5 PFPeA       | 97        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| 13C2 PFHxA       | 85        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| 13C4 PFHpA       | 92        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| 13C4 PFOA        | 94        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| 13C5 PFNA        | 96        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| 13C2 PFDA        | 94        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:06 | 1       |
| 13C2 PFUnA       | 97        |           | 25 - 150 | 01/15/22 06:05 | 01/15/22 23:06 | 1       |

Eurofins Sacramento

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: MB 320-558205/1-A**  
**Matrix: Water**  
**Analysis Batch: 558233**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 558205**

| <i>Isotope Dilution</i> | <i>MB MB</i>     |                  | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |                 |                 |                |
| 13C2 PFDoA              | 94               |                  | 25 - 150      | 01/15/22 06:05  | 01/15/22 23:06  | 1              |
| 13C2 PFTeDA             | 97               |                  | 25 - 150      | 01/15/22 06:05  | 01/15/22 23:06  | 1              |
| 13C3 PFBS               | 93               |                  | 25 - 150      | 01/15/22 06:05  | 01/15/22 23:06  | 1              |
| 18O2 PFHxS              | 89               |                  | 25 - 150      | 01/15/22 06:05  | 01/15/22 23:06  | 1              |
| 13C4 PFOS               | 90               |                  | 25 - 150      | 01/15/22 06:05  | 01/15/22 23:06  | 1              |
| 13C8 FOSA               | 92               |                  | 25 - 150      | 01/15/22 06:05  | 01/15/22 23:06  | 1              |
| d3-NMeFOSAA             | 93               |                  | 25 - 150      | 01/15/22 06:05  | 01/15/22 23:06  | 1              |
| d5-NEtFOSAA             | 100              |                  | 25 - 150      | 01/15/22 06:05  | 01/15/22 23:06  | 1              |
| M2-6:2 FTS              | 86               |                  | 25 - 150      | 01/15/22 06:05  | 01/15/22 23:06  | 1              |
| M2-8:2 FTS              | 81               |                  | 25 - 150      | 01/15/22 06:05  | 01/15/22 23:06  | 1              |

**Lab Sample ID: LCS 320-558205/2-A**  
**Matrix: Water**  
**Analysis Batch: 558233**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 558205**

| <i>Analyte</i>   | <i>Spike Added</i> | <i>LCS Result</i> | <i>LCS Qualifier</i> | <i>Unit</i> | <i>D</i> | <i>%Rec</i> | <i>%Rec.</i>  |
|--|--------------------|-------------------|----------------------|-------------|----------|-------------|---------------|
|  |                    |                   |                      |             |          |             | <i>Limits</i> |
| Perfluorobutanoic acid (PFBA)                            | 40.0               | 36.1              |                      | ng/L        |          | 90          | 76 - 136      |
| Perfluoropentanoic acid (PFPeA)                          | 40.0               | 33.1              |                      | ng/L        |          | 83          | 71 - 131      |
| Perfluorohexanoic acid (PFHxA)                           | 40.0               | 33.4              |                      | ng/L        |          | 84          | 73 - 133      |
| Perfluoroheptanoic acid (PFHpA)                          | 40.0               | 37.5              |                      | ng/L        |          | 94          | 72 - 132      |
| Perfluorooctanoic acid (PFOA)                            | 40.0               | 34.5              |                      | ng/L        |          | 86          | 70 - 130      |
| Perfluorononanoic acid (PFNA)                            | 40.0               | 35.3              |                      | ng/L        |          | 88          | 75 - 135      |
| Perfluorodecanoic acid (PFDA)                            | 40.0               | 34.3              |                      | ng/L        |          | 86          | 76 - 136      |
| Perfluoroundecanoic acid (PFUnA)                         | 40.0               | 36.0              |                      | ng/L        |          | 90          | 68 - 128      |
| Perfluorododecanoic acid (PFDoA)                         | 40.0               | 37.4              |                      | ng/L        |          | 94          | 71 - 131      |
| Perfluorotridecanoic acid (PFTriA)                       | 40.0               | 37.5              |                      | ng/L        |          | 94          | 71 - 131      |
| Perfluorotetradecanoic acid (PFTeA)                      | 40.0               | 35.3              |                      | ng/L        |          | 88          | 70 - 130      |
| Perfluorobutanesulfonic acid (PFBS)                      | 35.4               | 30.4              |                      | ng/L        |          | 86          | 67 - 127      |
| Perfluorohexanesulfonic acid (PFHxS)                     | 36.4               | 34.3              |                      | ng/L        |          | 94          | 59 - 119      |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 38.1               | 34.5              |                      | ng/L        |          | 91          | 76 - 136      |
| Perfluorooctanesulfonic acid (PFOS)                      | 37.1               | 31.8              |                      | ng/L        |          | 86          | 70 - 130      |
| Perfluorodecanesulfonic acid (PFDS)                      | 38.6               | 33.3              |                      | ng/L        |          | 86          | 71 - 131      |
| Perfluorooctanesulfonamide (FOSA)                        | 40.0               | 38.8              |                      | ng/L        |          | 97          | 73 - 133      |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 40.0               | 36.2              |                      | ng/L        |          | 90          | 76 - 136      |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | 40.0               | 37.1              |                      | ng/L        |          | 93          | 76 - 136      |
| 6:2 FTS  | 37.9               | 34.7              |                      | ng/L        |          | 92          | 59 - 175      |
| 8:2 FTS  | 38.3               | 34.7              |                      | ng/L        |          | 90          | 75 - 135      |

| <i>Isotope Dilution</i> | <i>LCS LCS</i>   |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFBA               | 92               |                  | 25 - 150      |

Eurofins Sacramento

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-558205/2-A**  
**Matrix: Water**  
**Analysis Batch: 558233**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 558205**

| <i>Isotope Dilution</i> | <i>LCS %Recovery</i> | <i>LCS Qualifier</i> | <i>Limits</i> |
|-------------------------|----------------------|----------------------|---------------|
| 13C5 PFPeA              | 102                  |                      | 25 - 150      |
| 13C2 PFHxA              | 97                   |                      | 25 - 150      |
| 13C4 PFHpA              | 96                   |                      | 25 - 150      |
| 13C4 PFOA               | 101                  |                      | 25 - 150      |
| 13C5 PFNA               | 103                  |                      | 25 - 150      |
| 13C2 PFDA               | 99                   |                      | 25 - 150      |
| 13C2 PFUnA              | 102                  |                      | 25 - 150      |
| 13C2 PFDoA              | 97                   |                      | 25 - 150      |
| 13C2 PFTeDA             | 104                  |                      | 25 - 150      |
| 13C3 PFBS               | 95                   |                      | 25 - 150      |
| 18O2 PFHxS              | 92                   |                      | 25 - 150      |
| 13C4 PFOS               | 99                   |                      | 25 - 150      |
| 13C8 FOSA               | 93                   |                      | 25 - 150      |
| d3-NMeFOSAA             | 96                   |                      | 25 - 150      |
| d5-NEtFOSAA             | 95                   |                      | 25 - 150      |
| M2-6:2 FTS              | 86                   |                      | 25 - 150      |
| M2-8:2 FTS              | 85                   |                      | 25 - 150      |

**Lab Sample ID: LCSD 320-558205/3-A**  
**Matrix: Water**  
**Analysis Batch: 558233**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 558205**

| <i>Analyte</i>   | <i>Spike Added</i> | <i>LCSD Result</i> | <i>LCSD Qualifier</i> | <i>Unit</i> | <i>D</i> | <i>%Rec</i> | <i>%Rec. Limits</i> | <i>RPD</i> | <i>RPD Limit</i> |
|--|--------------------|--------------------|-----------------------|-------------|----------|-------------|---------------------|------------|------------------|
| Perfluorobutanoic acid (PFBA)                            | 40.0               | 35.5               |                       | ng/L        |          | 89          | 76 - 136            | 2          | 30               |
| Perfluoropentanoic acid (PFPeA)                          | 40.0               | 36.7               |                       | ng/L        |          | 92          | 71 - 131            | 10         | 30               |
| Perfluorohexanoic acid (PFHxA)                           | 40.0               | 35.8               |                       | ng/L        |          | 90          | 73 - 133            | 7          | 30               |
| Perfluoroheptanoic acid (PFHpA)                          | 40.0               | 34.0               |                       | ng/L        |          | 85          | 72 - 132            | 10         | 30               |
| Perfluorooctanoic acid (PFOA)                            | 40.0               | 35.9               |                       | ng/L        |          | 90          | 70 - 130            | 4          | 30               |
| Perfluorononanoic acid (PFNA)                            | 40.0               | 36.7               |                       | ng/L        |          | 92          | 75 - 135            | 4          | 30               |
| Perfluorodecanoic acid (PFDA)                            | 40.0               | 33.7               |                       | ng/L        |          | 84          | 76 - 136            | 2          | 30               |
| Perfluoroundecanoic acid (PFUnA)                         | 40.0               | 36.1               |                       | ng/L        |          | 90          | 68 - 128            | 0          | 30               |
| Perfluorododecanoic acid (PFDoA)                         | 40.0               | 37.2               |                       | ng/L        |          | 93          | 71 - 131            | 1          | 30               |
| Perfluorotridecanoic acid (PFTriA)                       | 40.0               | 36.0               |                       | ng/L        |          | 90          | 71 - 131            | 4          | 30               |
| Perfluorotetradecanoic acid (PFTeA)                      | 40.0               | 35.3               |                       | ng/L        |          | 88          | 70 - 130            | 0          | 30               |
| Perfluorobutanesulfonic acid (PFBS)                      | 35.4               | 31.2               |                       | ng/L        |          | 88          | 67 - 127            | 2          | 30               |
| Perfluorohexanesulfonic acid (PFHxS)                     | 36.4               | 34.2               |                       | ng/L        |          | 94          | 59 - 119            | 0          | 30               |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 38.1               | 35.1               |                       | ng/L        |          | 92          | 76 - 136            | 2          | 30               |
| Perfluorooctanesulfonic acid (PFOS)                      | 37.1               | 32.0               |                       | ng/L        |          | 86          | 70 - 130            | 1          | 30               |
| Perfluorodecanesulfonic acid (PFDS)                      | 38.6               | 33.0               |                       | ng/L        |          | 86          | 71 - 131            | 1          | 30               |
| Perfluorooctanesulfonamide (FOSA)                        | 40.0               | 37.2               |                       | ng/L        |          | 93          | 73 - 133            | 4          | 30               |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 40.0               | 37.4               |                       | ng/L        |          | 94          | 76 - 136            | 3          | 30               |

Eurofins Sacramento

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCSD 320-558205/3-A**  
**Matrix: Water**  
**Analysis Batch: 558233**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 558205**

| Analyte   | Spike<br>Added | LCSD<br>Result | LCSD<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits | RPD | RPD<br>Limit |
|---|----------------|----------------|-------------------|------|---|------|-----------------|-----|--------------|
| N-ethylperfluorooctanesulfonami<br>doacetic acid (NEtFOSAA) | 40.0           | 36.3           |                   | ng/L |   | 91   | 76 - 136        | 2   | 30           |
| 6:2 FTS   | 37.9           | 35.9           |                   | ng/L |   | 95   | 59 - 175        | 3   | 30           |
| 8:2 FTS   | 38.3           | 35.1           |                   | ng/L |   | 92   | 75 - 135        | 1   | 30           |

| Isotope Dilution | LCSD<br>%Recovery | LCSD<br>Qualifier | Limits   |
|------------------|-------------------|-------------------|----------|
| 13C4 PFBA        | 96                |                   | 25 - 150 |
| 13C5 PFPeA       | 98                |                   | 25 - 150 |
| 13C2 PFHxA       | 96                |                   | 25 - 150 |
| 13C4 PFHpA       | 104               |                   | 25 - 150 |
| 13C4 PFOA        | 99                |                   | 25 - 150 |
| 13C5 PFNA        | 100               |                   | 25 - 150 |
| 13C2 PFDA        | 105               |                   | 25 - 150 |
| 13C2 PFUnA       | 103               |                   | 25 - 150 |
| 13C2 PFDoA       | 102               |                   | 25 - 150 |
| 13C2 PFTeDA      | 103               |                   | 25 - 150 |
| 13C3 PFBS        | 95                |                   | 25 - 150 |
| 18O2 PFHxS       | 93                |                   | 25 - 150 |
| 13C4 PFOS        | 97                |                   | 25 - 150 |
| 13C8 FOSA        | 98                |                   | 25 - 150 |
| d3-NMeFOSAA      | 98                |                   | 25 - 150 |
| d5-NEtFOSAA      | 104               |                   | 25 - 150 |
| M2-6:2 FTS       | 84                |                   | 25 - 150 |
| M2-8:2 FTS       | 91                |                   | 25 - 150 |

# QC Association Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

## LCMS

### Prep Batch: 555892

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 320-83481-1         | 52-59                  | Total/NA  | Water  | 3535   |            |
| 320-83481-3         | W-1                    | Total/NA  | Water  | 3535   |            |
| 320-83481-5         | 52-63                  | Total/NA  | Water  | 3535   |            |
| 320-83481-7         | 52-65                  | Total/NA  | Water  | 3535   |            |
| 320-83481-9         | 52-61                  | Total/NA  | Water  | 3535   |            |
| 320-83481-11        | 46-63                  | Total/NA  | Water  | 3535   |            |
| 320-83481-13        | 52-67                  | Total/NA  | Water  | 3535   |            |
| MB 320-555892/1-A   | Method Blank           | Total/NA  | Water  | 3535   |            |
| LCS 320-555892/2-A  | Lab Control Sample     | Total/NA  | Water  | 3535   |            |
| LCSD 320-555892/3-A | Lab Control Sample Dup | Total/NA  | Water  | 3535   |            |

### Analysis Batch: 556555

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method         | Prep Batch |
|---------------------|------------------------|-----------|--------|----------------|------------|
| 320-83481-1         | 52-59                  | Total/NA  | Water  | 537 (modified) | 555892     |
| 320-83481-3         | W-1                    | Total/NA  | Water  | 537 (modified) | 555892     |
| 320-83481-5         | 52-63                  | Total/NA  | Water  | 537 (modified) | 555892     |
| 320-83481-7         | 52-65                  | Total/NA  | Water  | 537 (modified) | 555892     |
| 320-83481-9         | 52-61                  | Total/NA  | Water  | 537 (modified) | 555892     |
| 320-83481-11        | 46-63                  | Total/NA  | Water  | 537 (modified) | 555892     |
| 320-83481-13        | 52-67                  | Total/NA  | Water  | 537 (modified) | 555892     |
| MB 320-555892/1-A   | Method Blank           | Total/NA  | Water  | 537 (modified) | 555892     |
| LCS 320-555892/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 (modified) | 555892     |
| LCSD 320-555892/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 (modified) | 555892     |

### Prep Batch: 558205

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 320-83481-2         | 52-59-BLK              | Total/NA  | Water  | 3535   |            |
| 320-83481-4         | W-1-BLK                | Total/NA  | Water  | 3535   |            |
| 320-83481-6         | 52-63-BLK              | Total/NA  | Water  | 3535   |            |
| 320-83481-8         | 52-65-BLK              | Total/NA  | Water  | 3535   |            |
| 320-83481-10        | 52-61-BLK              | Total/NA  | Water  | 3535   |            |
| 320-83481-12        | 46-63-BLK              | Total/NA  | Water  | 3535   |            |
| 320-83481-14        | 52-67-BLK              | Total/NA  | Water  | 3535   |            |
| MB 320-558205/1-A   | Method Blank           | Total/NA  | Water  | 3535   |            |
| LCS 320-558205/2-A  | Lab Control Sample     | Total/NA  | Water  | 3535   |            |
| LCSD 320-558205/3-A | Lab Control Sample Dup | Total/NA  | Water  | 3535   |            |

### Analysis Batch: 558233

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method         | Prep Batch |
|---------------------|------------------------|-----------|--------|----------------|------------|
| 320-83481-2         | 52-59-BLK              | Total/NA  | Water  | 537 (modified) | 558205     |
| 320-83481-4         | W-1-BLK                | Total/NA  | Water  | 537 (modified) | 558205     |
| 320-83481-6         | 52-63-BLK              | Total/NA  | Water  | 537 (modified) | 558205     |
| 320-83481-8         | 52-65-BLK              | Total/NA  | Water  | 537 (modified) | 558205     |
| 320-83481-10        | 52-61-BLK              | Total/NA  | Water  | 537 (modified) | 558205     |
| 320-83481-12        | 46-63-BLK              | Total/NA  | Water  | 537 (modified) | 558205     |
| 320-83481-14        | 52-67-BLK              | Total/NA  | Water  | 537 (modified) | 558205     |
| MB 320-558205/1-A   | Method Blank           | Total/NA  | Water  | 537 (modified) | 558205     |
| LCS 320-558205/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 (modified) | 558205     |
| LCSD 320-558205/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 (modified) | 558205     |

Eurofins Sacramento



# Lab Chronicle

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

## Client Sample ID: 52-59

Date Collected: 12/29/21 09:15

Date Received: 12/30/21 10:35

## Lab Sample ID: 320-83481-1

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 258.2 mL       | 10.0 mL      | 555892       | 01/04/22 12:25       | KJW     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 556555       | 01/07/22 01:45       | K1S     | TAL SAC |

## Client Sample ID: 52-59-BLK

Date Collected: 12/29/21 09:20

Date Received: 12/30/21 10:35

## Lab Sample ID: 320-83481-2

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 268.4 mL       | 10.0 mL      | 558205       | 01/15/22 06:05       | EG      | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 558233       | 01/15/22 23:37       | S1M     | TAL SAC |

## Client Sample ID: W-1

Date Collected: 12/29/21 09:40

Date Received: 12/30/21 10:35

## Lab Sample ID: 320-83481-3

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 263.7 mL       | 10.0 mL      | 555892       | 01/04/22 12:25       | KJW     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 556555       | 01/07/22 01:56       | K1S     | TAL SAC |

## Client Sample ID: W-1-BLK

Date Collected: 12/29/21 09:45

Date Received: 12/30/21 10:35

## Lab Sample ID: 320-83481-4

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 265.2 mL       | 10.0 mL      | 558205       | 01/15/22 06:05       | EG      | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 558233       | 01/15/22 23:47       | S1M     | TAL SAC |

## Client Sample ID: 52-63

Date Collected: 12/29/21 10:15

Date Received: 12/30/21 10:35

## Lab Sample ID: 320-83481-5

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 259.6 mL       | 10.0 mL      | 555892       | 01/04/22 12:25       | KJW     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 556555       | 01/07/22 02:06       | K1S     | TAL SAC |

## Client Sample ID: 52-63-BLK

Date Collected: 12/29/21 10:20

Date Received: 12/30/21 10:35

## Lab Sample ID: 320-83481-6

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 270.8 mL       | 10.0 mL      | 558205       | 01/15/22 06:05       | EG      | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 558233       | 01/15/22 23:57       | S1M     | TAL SAC |

# Lab Chronicle

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

## Client Sample ID: 52-65

Date Collected: 12/29/21 10:40

Date Received: 12/30/21 10:35

## Lab Sample ID: 320-83481-7

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 253.7 mL       | 10.0 mL      | 555892       | 01/04/22 12:25       | KJW     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 556555       | 01/07/22 02:16       | K1S     | TAL SAC |

## Client Sample ID: 52-65-BLK

Date Collected: 12/29/21 10:45

Date Received: 12/30/21 10:35

## Lab Sample ID: 320-83481-8

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 268.5 mL       | 10.0 mL      | 558205       | 01/15/22 06:05       | EG      | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 558233       | 01/16/22 00:07       | S1M     | TAL SAC |

## Client Sample ID: 52-61

Date Collected: 12/29/21 11:15

Date Received: 12/30/21 10:35

## Lab Sample ID: 320-83481-9

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 256.2 mL       | 10.0 mL      | 555892       | 01/04/22 12:25       | KJW     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 556555       | 01/07/22 02:26       | K1S     | TAL SAC |

## Client Sample ID: 52-61-BLK

Date Collected: 12/29/21 11:20

Date Received: 12/30/21 10:35

## Lab Sample ID: 320-83481-10

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 267.6 mL       | 10.0 mL      | 558205       | 01/15/22 06:05       | EG      | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 558233       | 01/16/22 00:17       | S1M     | TAL SAC |

## Client Sample ID: 46-63

Date Collected: 12/29/21 11:45

Date Received: 12/30/21 10:35

## Lab Sample ID: 320-83481-11

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 263.4 mL       | 10.0 mL      | 555892       | 01/04/22 12:25       | KJW     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 556555       | 01/07/22 02:36       | K1S     | TAL SAC |

## Client Sample ID: 46-63-BLK

Date Collected: 12/29/21 11:50

Date Received: 12/30/21 10:35

## Lab Sample ID: 320-83481-12

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 270.3 mL       | 10.0 mL      | 558205       | 01/15/22 06:05       | EG      | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 558233       | 01/16/22 00:27       | S1M     | TAL SAC |

Eurofins Sacramento

# Lab Chronicle

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

**Client Sample ID: 52-67**

**Lab Sample ID: 320-83481-13**

Date Collected: 12/29/21 12:15

Matrix: Water

Date Received: 12/30/21 10:35

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 261.5 mL       | 10.0 mL      | 555892       | 01/04/22 12:25       | KJW     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 556555       | 01/07/22 02:46       | K1S     | TAL SAC |

**Client Sample ID: 52-67-BLK**

**Lab Sample ID: 320-83481-14**

Date Collected: 12/29/21 12:20

Matrix: Water

Date Received: 12/30/21 10:35

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 266.7 mL       | 10.0 mL      | 558205       | 01/15/22 06:05       | EG      | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 558233       | 01/16/22 00:38       | S1M     | TAL SAC |

**Laboratory References:**

TAL SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# Accreditation/Certification Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

## Laboratory: Eurofins Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | CA00004               | 04-14-22        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte  |
|-----------------|-------------|--------|--|
| 537 (modified)  | 3535        | Water  | 6:2 FTS  |
| 537 (modified)  | 3535        | Water  | 8:2 FTS  |
| 537 (modified)  | 3535        | Water  | N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  |
| 537 (modified)  | 3535        | Water  | N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) |
| 537 (modified)  | 3535        | Water  | Perfluorobutanesulfonic acid (PFBS)                      |
| 537 (modified)  | 3535        | Water  | Perfluorobutanoic acid (PFBA)                            |
| 537 (modified)  | 3535        | Water  | Perfluorodecanesulfonic acid (PFDS)                      |
| 537 (modified)  | 3535        | Water  | Perfluorodecanoic acid (PFDA)                            |
| 537 (modified)  | 3535        | Water  | Perfluorododecanoic acid (PFDoA)                         |
| 537 (modified)  | 3535        | Water  | Perfluoroheptanesulfonic Acid (PFHpS)                    |
| 537 (modified)  | 3535        | Water  | Perfluoroheptanoic acid (PFHpA)                          |
| 537 (modified)  | 3535        | Water  | Perfluorohexanesulfonic acid (PFHxS)                     |
| 537 (modified)  | 3535        | Water  | Perfluorohexanoic acid (PFHxA)                           |
| 537 (modified)  | 3535        | Water  | Perfluorononanoic acid (PFNA)                            |
| 537 (modified)  | 3535        | Water  | Perfluorooctanesulfonamide (FOSA)                        |
| 537 (modified)  | 3535        | Water  | Perfluorooctanesulfonic acid (PFOS)                      |
| 537 (modified)  | 3535        | Water  | Perfluorooctanoic acid (PFOA)                            |
| 537 (modified)  | 3535        | Water  | Perfluoropentanoic acid (PFPeA)                          |
| 537 (modified)  | 3535        | Water  | Perfluorotetradecanoic acid (PFTeA)                      |
| 537 (modified)  | 3535        | Water  | Perfluorotridecanoic acid (PFTriA)                       |
| 537 (modified)  | 3535        | Water  | Perfluoroundecanoic acid (PFUnA)                         |
| 537 (modified)  | 3535        | Water  | Total PFOA and PFOS                                      |

# Method Summary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

| Method         | Method Description           | Protocol | Laboratory |
|----------------|------------------------------|----------|------------|
| 537 (modified) | Fluorinated Alkyl Substances | EPA      | TAL SAC    |
| 3535           | Solid-Phase Extraction (SPE) | SW846    | TAL SAC    |

**Protocol References:**

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

# Sample Summary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-83481-1

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 320-83481-1   | 52-59            | Water  | 12/29/21 09:15 | 12/30/21 10:35 |
| 320-83481-2   | 52-59-BLK        | Water  | 12/29/21 09:20 | 12/30/21 10:35 |
| 320-83481-3   | W-1              | Water  | 12/29/21 09:40 | 12/30/21 10:35 |
| 320-83481-4   | W-1-BLK          | Water  | 12/29/21 09:45 | 12/30/21 10:35 |
| 320-83481-5   | 52-63            | Water  | 12/29/21 10:15 | 12/30/21 10:35 |
| 320-83481-6   | 52-63-BLK        | Water  | 12/29/21 10:20 | 12/30/21 10:35 |
| 320-83481-7   | 52-65            | Water  | 12/29/21 10:40 | 12/30/21 10:35 |
| 320-83481-8   | 52-65-BLK        | Water  | 12/29/21 10:45 | 12/30/21 10:35 |
| 320-83481-9   | 52-61            | Water  | 12/29/21 11:15 | 12/30/21 10:35 |
| 320-83481-10  | 52-61-BLK        | Water  | 12/29/21 11:20 | 12/30/21 10:35 |
| 320-83481-11  | 46-63            | Water  | 12/29/21 11:45 | 12/30/21 10:35 |
| 320-83481-12  | 46-63-BLK        | Water  | 12/29/21 11:50 | 12/30/21 10:35 |
| 320-83481-13  | 52-67            | Water  | 12/29/21 12:15 | 12/30/21 10:35 |
| 320-83481-14  | 52-67-BLK        | Water  | 12/29/21 12:20 | 12/30/21 10:35 |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

# Chain of Custody Record 589972 eurofins

Environment Testing TestAmerica

TAL-8210

Address:

Regulatory Program:  DW  NPDES  RCRA  Other:

**Client Contact**  
 Company Name: Wood ETIS  
 Address: 511 Congress St  
 City/State/Zip: Portland ME 04101  
 Phone: 207.775.5401  
 Fax:  
 Project Name: TRX Tech  
 Site: 361171208  
 P O #

**Project Manager:** Rebecca Brasman  
**Tel/Email:** 207.828.2635  
 Analysis Turnaround Time  
 CALENDAR DAYS  WORKING DAYS  
 TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

**Site Contact:** Lauren Tenney  
**Date:** 12/29/21  
**Carrier:**  
**Lab Contact:** Julie Rivard  
**Date:** 12/29/21  
**Carrier:**

**Sampler:** Lauren Tenney  
**For Lab Use Only:**  
 Walk-in Client:  
 Lab Sampling:  
 Job / SDG No.:



320-83481 Chain of Custody

| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=Grab) | Matrix | # of Cont. | Filtered Sample (Y/N) | Perform MS / MSD (Y/N) | Sample Specific Notes |
|-----------------------|-------------|-------------|------------------------------|--------|------------|-----------------------|------------------------|-----------------------|
| S2-59                 | 12/29/21    | 0915        | G                            | W      | 2          | N                     | N                      | Hold for analysis     |
| S2-59-BLK             | 12/29/21    | 0920        | G                            | W      | 2          | N                     | N                      | Hold for analysis     |
| W-7                   | 12/29/21    | 0940        | G                            | W      | 2          | N                     | N                      | Hold for analysis     |
| W-7-BLK               | 12/29/21    | 0945        | G                            | W      | 2          | N                     | N                      | Hold for analysis     |
| S2-63                 | 12/29/21    | 1015        | G                            | W      | 2          | N                     | N                      | Hold for analysis     |
| S2-63-BLK             | 12/29/21    | 1020        | G                            | W      | 2          | N                     | N                      | Hold for analysis     |
| S2-65                 | 12/29/21    | 1040        | G                            | W      | 2          | N                     | N                      | Hold for analysis     |
| S2-65-BLK             | 12/29/21    | 1045        | G                            | W      | 2          | N                     | N                      | Hold for analysis     |
| S2-61                 | 12/29/21    | 1115        | G                            | W      | 2          | N                     | N                      | Hold for analysis     |
| S2-61-BLK             | 12/29/21    | 1120        | G                            | W      | 2          | N                     | N                      | Hold for analysis     |
| 46-63                 | 12/29/21    | 1145        | G                            | W      | 2          | N                     | N                      | Hold for analysis     |
| 46-63-BLK             | 12/29/21    | 1150        | G                            | W      | 2          | N                     | N                      | Hold for analysis     |

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Special Instructions/QC Requirements & Comments:  
 Hold all blanks pending PM approval

| Company | Date/Time     | Received by | Received in Laboratory by | Company | Date/Time     | Received by | Received in Laboratory by              | Company | Date/Time     |
|---------|---------------|-------------|---------------------------|---------|---------------|-------------|--|---------|---------------|
| Wood    | 12/29/21 1600 | Fed Ex      | Received by: [Signature]  | Wood    | 12/29/21 1600 | Fed Ex      | Received in Laboratory by: [Signature] | Wood    | 12/29/21 1600 |
|         |               |             |                           | FETA    | 12/30/21 1055 | FETA        |  | FETA    | 12/30/21 1055 |





Address: \_\_\_\_\_

TAL-8210

Regulatory Program:  DW  NPDES  RCRA  Other:

Client Contact  
 Company Name: Wood E. IS  
 Address: 511 Congress St  
 City/State/Zip: Portland, ME 04101  
 Phone: 207.975.5401  
 Fax:  
 Project Name: Tex Tech  
 Site: 34471204  
 P O #

Project Manager: Rebecca Besson  
 Tel/Email: 207-824-2635  
 Analysis Turnaround Time  
 CALENDAR DAYS  WORKING DAYS  
 TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

Site Contact: Lauren Tierney  
 Lab Contact: Julie Ricard  
 Date: 12/29/21  
 Carrier:

COC No: 1 of 2 COCs  
 Sampler: Lauren Tierney  
 For Lab Use Only:  
 Walk-in Client:  
 Lab Sampling:  
 Job / SDG No.:

| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=Grab) | Matrix | # of Cont. | Filtered Sample (Y/N) | Perform MS/MSD (Y/N) | Sample Specific Notes: |
|-----------------------|-------------|-------------|------------------------------|--------|------------|-----------------------|----------------------|------------------------|
| S2-67                 | 12/29/21    | 1215        | G                            | W      | 2          | N                     | N                    | HOLD for analysis      |
| S2-67-BLK             | 12/29/21    | 1220        | G                            | W      | 2          | N                     | N                    |                        |
| (BT)                  |             |             |                              |        |            |                       |                      |                        |

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other  
 Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  
 Special Instructions/QC Requirements & Comments:  
 Hold all blanks pending P.M. approval

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months  
 Custody Seal No.: 95947, 959476  
 Cooler Temp. (°C): Obs'd: 22 Corr'd: 22 Therm ID No.:  
 Received by: Fed Ex Date/Time: 12/29/21 1600 Company: Fed Ex  
 Received by: [Signature] Date/Time: 12/30/21 1035 Company: BATA  
 Received in Laboratory by: [Signature]



# Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 320-83481-1

**Login Number: 83481**

**List Source: Eurofins Sacramento**

**List Number: 1**

**Creator: Her, David A**

| Question   | Answer | Comment       |
|--|--------|---------------|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | True   |               |
| The cooler's custody seal, if present, is intact.                                | True   | 959477/959476 |
| Sample custody seals, if present, are intact.                                    | N/A    |               |
| The cooler or samples do not appear to have been compromised or tampered with.   | True   |               |
| Samples were received on ice.  | True   |               |
| Cooler Temperature is acceptable.  | True   |               |
| Cooler Temperature is recorded.  | True   |               |
| COC is present.  | True   |               |
| COC is filled out in ink and legible.  | True   |               |
| COC is filled out with all pertinent information.                                | True   |               |
| Is the Field Sampler's name present on COC?                                      | True   |               |
| There are no discrepancies between the containers received and the COC.          | True   |               |
| Samples are received within Holding Time (excluding tests with immediate HTs)    | True   |               |
| Sample containers have legible labels.   | True   |               |
| Containers are not broken or leaking.  | True   |               |
| Sample collection date/times are provided.                                       | True   |               |
| Appropriate sample containers are used.  | True   |               |
| Sample bottles are completely filled.  | True   |               |
| Sample Preservation Verified.  | N/A    |               |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True   |               |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").  | True   |               |
| Multiphasic samples are not present.   | True   |               |
| Samples do not require splitting or compositing.                                 | True   |               |
| Residual Chlorine Checked.   | N/A    |               |

## Kellmann, Jill

---

**From:** Ricardi, Julie A <julie.ricardi@woodplc.com>  
**Sent:** Friday, January 14, 2022 4:10 PM  
**To:** Kellmann, Jill  
**Cc:** Brosnan, Rebecca  
**Subject:** RE: YES--Please Analyze Field Blanks for 320-83481-1 - Tex Tech, ME Site

EXTERNAL EMAIL\*

Thank you! --Julie

**Julie Ricardi**

Senior 2 Scientist – QA Specialist  
511 Congress Street, Portland, ME 04101  
Direct: (207) 828-3608  
Mobile: (207) 240-2898  
[www.woodplc.com](http://www.woodplc.com)

**wood.**



---

**From:** Kellmann, Jill <Jill.Kellmann@Eurofinset.com>  
**Sent:** Friday, January 14, 2022 7:03 PM  
**To:** Ricardi, Julie A <julie.ricardi@woodplc.com>  
**Cc:** Brosnan, Rebecca <rebecca.brosnan@woodplc.com>  
**Subject:** RE: YES--Please Analyze Field Blanks for 320-83481-1 - Tex Tech, ME Site

**CAUTION:** External email. Please do not click on links/attachments unless you know the content is genuine and safe.

Got it!

Thank you and have a nice weekend, as well!

Jill Kellmann  
Customer Service Manager



*Please let us know what you think of the services...its only one click, one rating*

Eurofins Environment Testing America - Sacramento  
880 Riverside Parkway  
West Sacramento, CA 95605

Direct: +1 916-374-4402  
Mobile: +1 916-358-0158

[jill.kellmann@eurofinsET.com](mailto:jill.kellmann@eurofinsET.com) | [www.EurofinsUS.com/env](http://www.EurofinsUS.com/env)

Follow us! Facebook | LinkedIn

---

**From:** Ricardi, Julie A <[julie.ricardi@woodplc.com](mailto:julie.ricardi@woodplc.com)>  
**Sent:** Friday, January 14, 2022 4:00 PM  
**To:** Kellmann, Jill <[Jill.Kellmann@Eurofinset.com](mailto:Jill.Kellmann@Eurofinset.com)>  
**Cc:** Brosnan, Rebecca <[rebecca.brosnan@woodplc.com](mailto:rebecca.brosnan@woodplc.com)>  
**Subject:** YES--Please Analyze Field Blanks for 320-83481-1 - Tex Tech, ME Site

EXTERNAL EMAIL\*

Hi Jill – So nice talking with you today! I got in touch with Becky and she confirmed that we’d like the field blanks extracted and analyzed for any samples with detections.

Thanks for checking and have a nice weekend! --Julie

**Julie Ricardi**  
Senior 2 Scientist – QA Specialist  
511 Congress Street, Portland, ME 04101  
Direct: (207) 828-3608  
Mobile: (207) 240-2898  
[www.woodplc.com](http://www.woodplc.com)





- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

---

**From:** Ricardi, Julie A  
**Sent:** Friday, January 14, 2022 6:49 PM  
**To:** Brosnan, Rebecca <[rebecca.brosnan@woodplc.com](mailto:rebecca.brosnan@woodplc.com)>  
**Cc:** Kellmann, Jill <[Jill.Kellmann@Eurofinset.com](mailto:Jill.Kellmann@Eurofinset.com)>  
**Subject:** FW: Eurofins Environment Testing Northern California, LLC report files from 320-83481-1 PFAS - Tex Tech, ME Site

Hi Becky,

Jill just called to note that all samples have PFAS detections greater than the reporting limits. Would you like TAL to extract the associated field blanks? I think Jill mentioned there are seven in all?

The holding time for the field blanks technically expires tomorrow (Sat 1/15) although we typically don't worry too much about HTs for field blanks if it's close and sample storage was typical, etc...PFAS really don't want to go anywhere..

But the sooner we can advise TAL the better – in light of the cost and that I don't know what your screening threshold for the samples is I didn't want to make the call without your input. Please reply to all when you can.

Thanks!  
Julie

**Julie Ricardi**  
Senior 2 Scientist – QA Specialist  
511 Congress Street, Portland, ME 04101  
Direct: (207) 828-3608  
Mobile: (207) 240-2898  
[www.woodplc.com](http://www.woodplc.com)



---

**From:** Jill Kellmann <[Jill.Kellmann@Eurofinset.com](mailto:Jill.Kellmann@Eurofinset.com)>  
**Sent:** Friday, January 14, 2022 6:36 PM  
**To:** Ricardi, Julie A <[julie.ricardi@woodplc.com](mailto:julie.ricardi@woodplc.com)>  
**Subject:** Eurofins Environment Testing Northern California, LLC report files from 320-83481-1 PFAS - Tex Tech, ME Site

**CAUTION:** External email. Please do not click on links/attachments unless you know the content is genuine and safe.

Hello,

Attached please find the report files for job 320-83481-1; PFAS - Tex Tech, ME Site.

Please confirm if you would like us to analyze the blanks on hold.

Please feel free to contact me if you have any questions.

Thank you.

**Jill Kellmann**  
Client Services Manager

Eurofins Sacramento  
Phone: 916-374-4402

E-mail: [Jill.Kellmann@Eurofinset.com](mailto:Jill.Kellmann@Eurofinset.com)  
[www.eurofinsus.com/env](http://www.eurofinsus.com/env)



Reference: [320-412943]  
Attachments: 2

---

This message is the property of John Wood Group PLC and/or its subsidiaries and/or affiliates and is intended only for the named recipient(s). Its contents (including any attachments) may be confidential, legally privileged or otherwise protected from disclosure by law. Unauthorized use, copying, distribution or disclosure of any of it may be unlawful and is strictly prohibited. We assume no responsibility to persons other than the intended named recipient(s) and do not accept liability for any errors or omissions which are a result of email transmission. If you have received this message in error, please notify us immediately by reply email to the sender and confirm that the original message and any attachments and copies have been destroyed and deleted from your system.

If you do not wish to receive future unsolicited commercial electronic messages from us, please forward this email to: [unsubscribe@woodplc.com](mailto:unsubscribe@woodplc.com) and include "Unsubscribe" in the subject line. If applicable, you will continue to receive invoices, project communications and similar factual, non-commercial electronic communications.

Please click <http://www.woodplc.com/email-disclaimer> for notices and company information in relation to emails originating in the UK, Italy or France.

As a recipient of an email from a John Wood Group Plc company, your contact information will be on our systems and we may hold other personal data about you such as identification information, CVs, financial information and information contained in correspondence. For more information on our privacy practices and your data protection rights, please see our privacy notice at <https://www.woodplc.com/policies/privacy-notice>

|    |
|----|
| 1  |
| 2  |
| 3  |
| 4  |
| 5  |
| 6  |
| 7  |
| 8  |
| 9  |
| 10 |
| 11 |
| 12 |
| 13 |
| 14 |
| 15 |
| 16 |

\* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

\* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!



## ANALYTICAL REPORT

Eurofins Sacramento  
880 Riverside Parkway  
West Sacramento, CA 95605  
Tel: (916)373-5600

Laboratory Job ID: 320-84484-1

Client Project/Site: PFAS - Tex Tech, ME Site

**For:**

Wood E&I Solutions Inc  
511 Congress St. Suite 200  
Portland, Maine 04101

Attn: Ms. Julie Ricardi



---

*Authorized for release by:  
2/25/2022 2:35:04 PM*

Jill Kellmann, Client Service Manager  
(916)374-4402  
[Jill.Kellmann@Eurofinset.com](mailto:Jill.Kellmann@Eurofinset.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 2  |
| Definitions/Glossary . . . . .     | 3  |
| Case Narrative . . . . .           | 4  |
| Detection Summary . . . . .        | 5  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 15 |
| QC Sample Results . . . . .        | 17 |
| QC Association Summary . . . . .   | 22 |
| Lab Chronicle . . . . .            | 23 |
| Certification Summary . . . . .    | 25 |
| Method Summary . . . . .           | 26 |
| Sample Summary . . . . .           | 27 |
| Chain of Custody . . . . .         | 28 |
| Receipt Checklists . . . . .       | 30 |

# Definitions/Glossary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| *5+       | Isotope dilution analyte is outside acceptance limits, high biased.  |
| I         | Value is EMPC (estimated maximum possible concentration).  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

---

## Job ID: 320-84484-1

---

### Laboratory: Eurofins Sacramento

#### Narrative

---

##### Receipt

The samples were received on 2/7/2022 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.8° C.

##### LCMS

Method 537 (modified): The continuing calibration verification (CCV) associated with batch 320-565303 recovered above the upper control limit for d5-NEtFOSAA, an isotope dilution analyte (IDA) used to quantitate the concentration of the associated native analyte N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA). This analyte was in control in the CCV, the CCVIS, CCVL, LCS and other CCV aliquots, indicating no adverse impact on target analyte quantitation. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries. Consequently, the associated sample results have been reported (CCV 320-565303/15).

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for the following samples: (LCS 320-564692/2-A) and (MB 320-564692/1-A). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was above the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte. 52-50 (320-84484-1), DUP01 (320-84484-5), 46-63A (320-84484-6), 52-57 (320-84484-10) and 52-51 (320-84484-12)

Method 537 (modified): Results for samples 46-63A (320-84484-6) and DUP02 (320-84484-7) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for the following sample: 52-50 (320-84484-1). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

##### Organic Prep

Method 3535: The following samples were observed to be light brown prior to extraction: DUP02 (320-84484-7). Preparation batch 320-564692

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

## Client Sample ID: 52-50

## Lab Sample ID: 320-84484-1

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluoropentanoic acid (PFPeA)      | 0.47   | J         | 1.7 | 0.43 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanoic acid (PFHxA)       | 2.3    |           | 1.7 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)      | 3.4    |           | 1.7 | 0.22 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 35     |           | 1.7 | 0.74 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)  | 3.2    |           | 1.7 | 0.17 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 4.9    |           | 1.7 | 0.50 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 2.6    | I         | 1.7 | 0.47 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                  | 38     |           | 1.7 | 0.47 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 52-54

## Lab Sample ID: 320-84484-2

| Analyte                       | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|-------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorooctanoic acid (PFOA) | 1.2    | J         | 1.8 | 0.78 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| 8:2 FTS                       | 4.7    |           | 1.8 | 0.42 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS           | 1.2    | J         | 1.8 | 0.50 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: DUP01

## Lab Sample ID: 320-84484-5

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluoropentanoic acid (PFPeA)      | 0.44   | J         | 1.6 | 0.40 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanoic acid (PFHxA)       | 2.0    |           | 1.6 | 0.47 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)      | 3.3    |           | 1.6 | 0.20 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 32     |           | 1.6 | 0.69 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)  | 3.1    |           | 1.6 | 0.16 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 4.6    |           | 1.6 | 0.46 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 2.5    | I         | 1.6 | 0.44 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)    | 1.6    |           | 1.6 | 0.79 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                  | 35     |           | 1.6 | 0.44 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 46-63A

## Lab Sample ID: 320-84484-6

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluoropentanoic acid (PFPeA)                              | 0.80   | J         | 1.6 | 0.40 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanoic acid (PFHxA)                               | 1.9    |           | 1.6 | 0.47 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)                              | 1.3    | J         | 1.6 | 0.20 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)                                | 11     |           | 1.6 | 0.69 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)                          | 0.67   | J         | 1.6 | 0.16 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS)                         | 0.87   | J         | 1.6 | 0.46 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)                          | 18     |           | 1.6 | 0.44 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS  | 29     |           | 1.6 | 0.44 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) - DL | 530    |           | 40  | 11   | ng/L | 10      |   | 537 (modified) | Total/NA  |

## Client Sample ID: DUP02

## Lab Sample ID: 320-84484-7

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|-------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluoropentanoic acid (PFPeA)     | 0.72   | J         | 1.7 | 0.42 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanoic acid (PFHxA)      | 1.7    |           | 1.7 | 0.49 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)     | 0.71   | J         | 1.7 | 0.21 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)       | 5.9    |           | 1.7 | 0.72 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorodecanoic acid (PFDA)       | 0.34   | J         | 1.7 | 0.26 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS) | 0.35   | J         | 1.7 | 0.17 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS) | 27     |           | 1.7 | 0.46 | ng/L | 1       |   | 537 (modified) | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Sacramento

# Detection Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

## Client Sample ID: DUP02 (Continued)

## Lab Sample ID: 320-84484-7

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Total PFOA and PFOS  | 33     |           | 1.7 | 0.46 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) - DL | 820    |           | 42  | 11   | ng/L | 10      |   | 537 (modified) | Total/NA  |

## Client Sample ID: 52-23

## Lab Sample ID: 320-84484-8

| Analyte   | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method         | Prep Type |
|---|--------|-----------|-----|-----|------|---------|---|----------------|-----------|
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 1.5    | J         | 4.8 | 1.2 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 52-57

## Lab Sample ID: 320-84484-10

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorooctanoic acid (PFOA)        | 2.1    |           | 1.8 | 0.78 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)  | 0.91   | J         | 1.8 | 0.18 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 1.2    | J         | 1.8 | 0.52 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 2.4    | I         | 1.8 | 0.49 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                  | 4.5    |           | 1.8 | 0.49 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 52-51

## Lab Sample ID: 320-84484-12

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorohexanoic acid (PFHxA)       | 0.90   | J         | 1.7 | 0.50 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)      | 1.8    |           | 1.7 | 0.21 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 19     |           | 1.7 | 0.73 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)  | 2.1    |           | 1.7 | 0.17 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 3.1    |           | 1.7 | 0.49 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 1.9    | I         | 1.7 | 0.46 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)    | 1.2    | J         | 1.7 | 0.84 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                  | 21     |           | 1.7 | 0.46 | ng/L | 1       |   | 537 (modified) | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

**Client Sample ID: 52-50**  
**Date Collected: 02/03/22 09:40**  
**Date Received: 02/07/22 09:30**

**Lab Sample ID: 320-84484-1**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result      | Qualifier       | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|-------------|-----------------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND          |                 | 4.4 | 2.1  | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| <b>Perfluoropentanoic acid (PFPeA)</b>                   | <b>0.47</b> | <b>J</b>        | 1.7 | 0.43 | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| <b>Perfluorohexanoic acid (PFHxA)</b>                    | <b>2.3</b>  |                 | 1.7 | 0.51 | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| <b>Perfluoroheptanoic acid (PFHpA)</b>                   | <b>3.4</b>  |                 | 1.7 | 0.22 | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>                     | <b>35</b>   |                 | 1.7 | 0.74 | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND          |                 | 1.7 | 0.24 | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND          |                 | 1.7 | 0.27 | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND          |                 | 1.7 | 0.96 | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND          |                 | 1.7 | 0.48 | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND          |                 | 1.7 | 1.1  | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND          |                 | 1.7 | 0.64 | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| <b>Perfluorobutanesulfonic acid (PFBS)</b>               | <b>3.2</b>  |                 | 1.7 | 0.17 | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| <b>Perfluorohexanesulfonic acid (PFHxS)</b>              | <b>4.9</b>  |                 | 1.7 | 0.50 | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND          |                 | 1.7 | 0.17 | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| <b>Perfluorooctanesulfonic acid (PFOS)</b>               | <b>2.6</b>  | <b>I J EMPC</b> | 1.7 | 0.47 | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND          |                 | 1.7 | 0.28 | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| <b>Perfluorooctanesulfonamide (FOSA)</b>                 | <b>ND</b>   | <b>UJ FD</b>    | 1.7 | 0.86 | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND          |                 | 4.4 | 1.0  | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND          |                 | 4.4 | 1.1  | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| 6:2 FTS  | ND          |                 | 4.4 | 2.2  | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| 8:2 FTS  | ND          |                 | 1.7 | 0.40 | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>38</b>   |                 | 1.7 | 0.47 | ng/L |   | 02/09/22 19:07 | 02/14/22 21:54 | 1       |

| Isotope Dilution   | %Recovery  | Qualifier  | Limits   | Prepared       | Analyzed       | Dil Fac |
|--------------------|------------|------------|----------|----------------|----------------|---------|
| 13C4 PFBA          | 119        |            | 25 - 150 | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| 13C5 PFPeA         | 121        |            | 25 - 150 | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| 13C2 PFHxA         | 122        |            | 25 - 150 | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| 13C4 PFHpA         | 124        |            | 25 - 150 | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| 13C4 PFOA          | 125        |            | 25 - 150 | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| 13C5 PFNA          | 120        |            | 25 - 150 | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| 13C2 PFDA          | 121        |            | 25 - 150 | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| 13C2 PFUnA         | 132        |            | 25 - 150 | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| 13C2 PFDoA         | 128        |            | 25 - 150 | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| 13C2 PFTeDA        | 123        |            | 25 - 150 | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| 13C3 PFBS          | 122        |            | 25 - 150 | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| 18O2 PFHxS         | 113        |            | 25 - 150 | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| 13C4 PFOS          | 133        |            | 25 - 150 | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| 13C8 FOSA          | 119        |            | 25 - 150 | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| d3-NMeFOSAA        | 131        |            | 25 - 150 | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| <b>d5-NEtFOSAA</b> | <b>151</b> | <b>*5+</b> | 25 - 150 | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| M2-6:2 FTS         | 115        |            | 25 - 150 | 02/09/22 19:07 | 02/14/22 21:54 | 1       |
| M2-8:2 FTS         | 127        |            | 25 - 150 | 02/09/22 19:07 | 02/14/22 21:54 | 1       |

EMPC = Estimated Maximum Potential Concentration  
FD = Field Duplicate precision goal exceeded  
CLC 2/29/2022

Eurofins Sacramento



# Client Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

**Client Sample ID: 52-54**

**Lab Sample ID: 320-84484-2**

Date Collected: 02/03/22 10:15

Matrix: Water

Date Received: 02/07/22 09:30

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result     | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|------------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND         |           | 4.6 | 2.2  | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND         |           | 1.8 | 0.45 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND         |           | 1.8 | 0.53 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | ND         |           | 1.8 | 0.23 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>                     | <b>1.2</b> | <b>J</b>  | 1.8 | 0.78 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND         |           | 1.8 | 0.25 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND         |           | 1.8 | 0.29 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND         |           | 1.8 | 1.0  | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND         |           | 1.8 | 0.51 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND         |           | 1.8 | 1.2  | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND         |           | 1.8 | 0.67 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | ND         |           | 1.8 | 0.18 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | ND         |           | 1.8 | 0.52 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND         |           | 1.8 | 0.17 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | ND         |           | 1.8 | 0.50 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND         |           | 1.8 | 0.29 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND         |           | 1.8 | 0.90 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND         |           | 4.6 | 1.1  | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND         |           | 4.6 | 1.2  | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| 6:2 FTS  | ND         |           | 4.6 | 2.3  | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| <b>8:2 FTS</b>   | <b>4.7</b> |           | 1.8 | 0.42 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>1.2</b> | <b>J</b>  | 1.8 | 0.50 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:25 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 117       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| 13C5 PFPeA       | 122       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| 13C2 PFHxA       | 122       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| 13C4 PFHpA       | 120       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| 13C4 PFOA        | 119       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| 13C5 PFNA        | 120       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| 13C2 PFDA        | 127       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| 13C2 PFUnA       | 136       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| 13C2 PFDoA       | 128       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| 13C2 PFTeDA      | 127       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| 13C3 PFBS        | 116       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| 18O2 PFHxS       | 120       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| 13C4 PFOS        | 123       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| 13C8 FOSA        | 124       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| d3-NMeFOSAA      | 133       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| d5-NEtFOSAA      | 144       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| M2-6:2 FTS       | 125       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:25 | 1       |
| M2-8:2 FTS       | 124       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:25 | 1       |

No DV Actions  
CLC 2/29/2022

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

**Client Sample ID: DUP01**

**Lab Sample ID: 320-84484-5**

**Date Collected: 02/03/22 12:00**

**Matrix: Water**

**Date Received: 02/07/22 09:30**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result      | Qualifier       | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|-------------|-----------------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND          |                 | 4.0 | 1.9  | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| <b>Perfluoropentanoic acid (PFPeA)</b>                   | <b>0.44</b> | <b>J</b>        | 1.6 | 0.40 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| <b>Perfluorohexanoic acid (PFHxA)</b>                    | <b>2.0</b>  |                 | 1.6 | 0.47 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| <b>Perfluoroheptanoic acid (PFHpA)</b>                   | <b>3.3</b>  |                 | 1.6 | 0.20 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>                     | <b>32</b>   |                 | 1.6 | 0.69 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND          |                 | 1.6 | 0.22 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND          |                 | 1.6 | 0.25 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND          |                 | 1.6 | 0.89 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND          |                 | 1.6 | 0.45 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND          |                 | 1.6 | 1.1  | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND          |                 | 1.6 | 0.59 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| <b>Perfluorobutanesulfonic acid (PFBS)</b>               | <b>3.1</b>  |                 | 1.6 | 0.16 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| <b>Perfluorohexanesulfonic acid (PFHxS)</b>              | <b>4.6</b>  |                 | 1.6 | 0.46 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND          |                 | 1.6 | 0.15 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| <b>Perfluorooctanesulfonic acid (PFOS)</b>               | <b>2.5</b>  | <b>I J EMPC</b> | 1.6 | 0.44 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND          |                 | 1.6 | 0.26 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| <b>Perfluorooctanesulfonamide (FOSA)</b>                 | <b>1.6</b>  | <b>J FD</b>     | 1.6 | 0.79 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND          |                 | 4.0 | 0.97 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND          |                 | 4.0 | 1.1  | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| 6:2 FTS  | ND          |                 | 4.0 | 2.0  | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| 8:2 FTS  | ND          |                 | 1.6 | 0.37 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>35</b>   |                 | 1.6 | 0.44 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:36 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 116       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| 13C5 PFPeA       | 119       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| 13C2 PFHxA       | 119       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| 13C4 PFHpA       | 118       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| 13C4 PFOA        | 126       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| 13C5 PFNA        | 119       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| 13C2 PFDA        | 123       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| 13C2 PFUnA       | 119       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| 13C2 PFDoA       | 122       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| 13C2 PFTeDA      | 114       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| 13C3 PFBS        | 114       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| 18O2 PFHxS       | 115       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| 13C4 PFOS        | 120       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| 13C8 FOSA        | 114       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| d3-NMeFOSAA      | 126       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| d5-NEtFOSAA      | 143       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| M2-6:2 FTS       | 119       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:36 | 1       |
| M2-8:2 FTS       | 116       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:36 | 1       |

EMPC = Estimated Maximum Potential Concentration  
FD = Field Duplicate precision goal exceeded  
CLC 2/29/2022

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

**Client Sample ID: 46-63A**

**Lab Sample ID: 320-84484-6**

Date Collected: 02/03/22 11:30

Matrix: Water

Date Received: 02/07/22 09:30

## Method: 537 (modified) - Fluorinated Alkyl Substances

| Analyte  | Result      | Qualifier   | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|-------------|-------------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND          |             | 4.0 | 1.9  | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| <b>Perfluoropentanoic acid (PFPeA)</b>                   | <b>0.80</b> | <b>J</b>    | 1.6 | 0.40 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| <b>Perfluorohexanoic acid (PFHxA)</b>                    | <b>1.9</b>  |             | 1.6 | 0.47 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| <b>Perfluoroheptanoic acid (PFHpA)</b>                   | <b>1.3</b>  | <b>J</b>    | 1.6 | 0.20 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>                     | <b>11</b>   | <b>J FD</b> | 1.6 | 0.69 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND          |             | 1.6 | 0.22 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND          |             | 1.6 | 0.25 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND          |             | 1.6 | 0.89 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND          |             | 1.6 | 0.44 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND          |             | 1.6 | 1.1  | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND          |             | 1.6 | 0.59 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| <b>Perfluorobutanesulfonic acid (PFBS)</b>               | <b>0.67</b> | <b>J</b>    | 1.6 | 0.16 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| <b>Perfluorohexanesulfonic acid (PFHxS)</b>              | <b>0.87</b> | <b>J</b>    | 1.6 | 0.46 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND          |             | 1.6 | 0.15 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| <b>Perfluorooctanesulfonic acid (PFOS)</b>               | <b>18</b>   | <b>J FD</b> | 1.6 | 0.44 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND          |             | 1.6 | 0.26 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND          |             | 1.6 | 0.79 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND          |             | 4.0 | 0.97 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| 6:2 FTS  | ND          |             | 4.0 | 2.0  | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| 8:2 FTS  | ND          |             | 1.6 | 0.37 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>29</b>   |             | 1.6 | 0.44 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:46 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 125       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| 13C5 PFPeA       | 124       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| 13C2 PFHxA       | 121       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| 13C4 PFHpA       | 125       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| 13C4 PFOA        | 118       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| 13C5 PFNA        | 124       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| 13C2 PFDA        | 127       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| 13C2 PFUnA       | 108       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| 13C2 PFDoA       | 89        |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| 13C2 PFTeDA      | 83        |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| 13C3 PFBS        | 125       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| 18O2 PFHxS       | 133       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| 13C4 PFOS        | 124       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| 13C8 FOSA        | 119       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| d3-NMeFOSAA      | 123       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| M2-6:2 FTS       | 117       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:46 | 1       |
| M2-8:2 FTS       | 127       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:46 | 1       |

## Method: 537 (modified) - Fluorinated Alkyl Substances - DL

| Analyte  | Result     | Qualifier   | RL       | MDL            | Unit           | D       | Prepared       | Analyzed       | Dil Fac |
|--|------------|-------------|----------|----------------|----------------|---------|----------------|----------------|---------|
| <b>N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)</b> | <b>530</b> | <b>J FD</b> | 40       | 11             | ng/L           |         | 02/09/22 19:07 | 02/15/22 13:30 | 10      |
| Isotope Dilution   | %Recovery  | Qualifier   | Limits   | Prepared       | Analyzed       | Dil Fac |                |                |         |
| d5-NEtFOSAA  | 123        |             | 25 - 150 | 02/09/22 19:07 | 02/15/22 13:30 | 10      |                |                |         |

Eurofins Sacramento

FD = Field Duplicate precision goal exceeded  
CLC 2/29/2022

# Client Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

**Client Sample ID: DUP02**

**Lab Sample ID: 320-84484-7**

Date Collected: 02/03/22 12:00

Matrix: Water

Date Received: 02/07/22 09:30

## Method: 537 (modified) - Fluorinated Alkyl Substances

| Analyte  | Result      | Qualifier   | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|-------------|-------------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND          |             | 4.2 | 2.0  | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| <b>Perfluoropentanoic acid (PFPeA)</b>                   | <b>0.72</b> | <b>J</b>    | 1.7 | 0.42 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| <b>Perfluorohexanoic acid (PFHxA)</b>                    | <b>1.7</b>  |             | 1.7 | 0.49 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| <b>Perfluoroheptanoic acid (PFHpA)</b>                   | <b>0.71</b> | <b>J</b>    | 1.7 | 0.21 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>                     | <b>5.9</b>  | <b>J FD</b> | 1.7 | 0.72 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND          |             | 1.7 | 0.23 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| <b>Perfluorodecanoic acid (PFDA)</b>                     | <b>0.34</b> | <b>J</b>    | 1.7 | 0.26 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND          |             | 1.7 | 0.93 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND          |             | 1.7 | 0.47 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND          |             | 1.7 | 1.1  | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND          |             | 1.7 | 0.62 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| <b>Perfluorobutanesulfonic acid (PFBS)</b>               | <b>0.35</b> | <b>J</b>    | 1.7 | 0.17 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | ND          |             | 1.7 | 0.48 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND          |             | 1.7 | 0.16 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| <b>Perfluorooctanesulfonic acid (PFOS)</b>               | <b>27</b>   | <b>J FD</b> | 1.7 | 0.46 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND          |             | 1.7 | 0.27 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND          |             | 1.7 | 0.83 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND          |             | 4.2 | 1.0  | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| 6:2 FTS  | ND          |             | 4.2 | 2.1  | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| 8:2 FTS  | ND          |             | 1.7 | 0.39 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>33</b>   |             | 1.7 | 0.46 | ng/L |   | 02/09/22 19:07 | 02/14/22 22:57 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 106       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| 13C5 PFPeA       | 111       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| 13C2 PFHxA       | 111       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| 13C4 PFHpA       | 113       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| 13C4 PFOA        | 118       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| 13C5 PFNA        | 115       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| 13C2 PFDA        | 111       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| 13C2 PFUnA       | 93        |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| 13C2 PFDoA       | 79        |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| 13C2 PFTeDA      | 72        |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| 13C3 PFBS        | 115       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| 18O2 PFHxS       | 111       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| 13C4 PFOS        | 116       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| 13C8 FOSA        | 99        |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| d3-NMeFOSAA      | 100       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| M2-6:2 FTS       | 105       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:57 | 1       |
| M2-8:2 FTS       | 102       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 22:57 | 1       |

## Method: 537 (modified) - Fluorinated Alkyl Substances - DL

| Analyte  | Result     | Qualifier   | RL       | MDL            | Unit           | D       | Prepared       | Analyzed       | Dil Fac |
|--|------------|-------------|----------|----------------|----------------|---------|----------------|----------------|---------|
| <b>N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)</b> | <b>820</b> | <b>J FD</b> | 42       | 11             | ng/L           |         | 02/09/22 19:07 | 02/15/22 13:41 | 10      |
| Isotope Dilution   | %Recovery  | Qualifier   | Limits   | Prepared       | Analyzed       | Dil Fac |                |                |         |
| d5-NEtFOSAA  | 118        |             | 25 - 150 | 02/09/22 19:07 | 02/15/22 13:41 | 10      |                |                |         |

FD = Field Duplicate precision goal exceeded  
CLC 2/29/2022

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

**Client Sample ID: 52-23**  
**Date Collected: 02/03/22 13:05**  
**Date Received: 02/07/22 09:30**

**Lab Sample ID: 320-84484-8**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result     | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|------------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                                  | ND         |           | 4.8 | 2.3  | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| Perfluoropentanoic acid (PFPeA)                                | ND         |           | 1.9 | 0.47 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| Perfluorohexanoic acid (PFHxA)                                 | ND         |           | 1.9 | 0.56 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| Perfluoroheptanoic acid (PFHpA)                                | ND         |           | 1.9 | 0.24 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| Perfluorooctanoic acid (PFOA)                                  | ND         |           | 1.9 | 0.81 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| Perfluorononanoic acid (PFNA)                                  | ND         |           | 1.9 | 0.26 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| Perfluorodecanoic acid (PFDA)                                  | ND         |           | 1.9 | 0.30 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| Perfluoroundecanoic acid (PFUnA)                               | ND         |           | 1.9 | 1.1  | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| Perfluorododecanoic acid (PFDoA)                               | ND         |           | 1.9 | 0.53 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| Perfluorotridecanoic acid (PFTriA)                             | ND         |           | 1.9 | 1.2  | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                            | ND         |           | 1.9 | 0.70 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                            | ND         |           | 1.9 | 0.19 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                           | ND         |           | 1.9 | 0.55 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                          | ND         |           | 1.9 | 0.18 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                            | ND         |           | 1.9 | 0.52 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                            | ND         |           | 1.9 | 0.31 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| Perfluorooctanesulfonamide (FOSA)                              | ND         |           | 1.9 | 0.94 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)       | ND         |           | 4.8 | 1.2  | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| <b>N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)</b> | <b>1.5</b> | <b>J</b>  | 4.8 | 1.2  | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| 6:2 FTS  | ND         |           | 4.8 | 2.4  | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| 8:2 FTS  | ND         |           | 1.9 | 0.44 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| Total PFOA and PFOS  | ND         |           | 1.9 | 0.52 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:07 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 112       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| 13C5 PFPeA       | 118       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| 13C2 PFHxA       | 116       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| 13C4 PFHpA       | 114       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| 13C4 PFOA        | 120       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| 13C5 PFNA        | 119       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| 13C2 PFDA        | 121       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| 13C2 PFUnA       | 127       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| 13C2 PFDoA       | 129       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| 13C2 PFTeDA      | 114       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| 13C3 PFBS        | 124       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| 18O2 PFHxS       | 115       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| 13C4 PFOS        | 123       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| 13C8 FOSA        | 114       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| d3-NMeFOSAA      | 134       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| d5-NEtFOSAA      | 148       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| M2-6:2 FTS       | 127       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:07 | 1       |
| M2-8:2 FTS       | 119       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:07 | 1       |

No DV Actions  
 CLC 2/29/2022

# Client Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

**Client Sample ID: 52-57**

**Lab Sample ID: 320-84484-10**

**Date Collected: 02/03/22 13:45**

**Matrix: Water**

**Date Received: 02/07/22 09:30**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result      | Qualifier       | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|-------------|-----------------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND          |                 | 4.6 | 2.2  | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND          |                 | 1.8 | 0.45 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND          |                 | 1.8 | 0.53 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | ND          |                 | 1.8 | 0.23 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>                     | <b>2.1</b>  |                 | 1.8 | 0.78 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND          |                 | 1.8 | 0.25 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND          |                 | 1.8 | 0.28 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND          |                 | 1.8 | 1.0  | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND          |                 | 1.8 | 0.50 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND          |                 | 1.8 | 1.2  | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND          |                 | 1.8 | 0.67 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| <b>Perfluorobutanesulfonic acid (PFBS)</b>               | <b>0.91</b> | <b>J</b>        | 1.8 | 0.18 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| <b>Perfluorohexanesulfonic acid (PFHxS)</b>              | <b>1.2</b>  | <b>J</b>        | 1.8 | 0.52 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND          |                 | 1.8 | 0.17 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| <b>Perfluorooctanesulfonic acid (PFOS)</b>               | <b>2.4</b>  | <b>I J EMPC</b> | 1.8 | 0.49 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND          |                 | 1.8 | 0.29 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND          |                 | 1.8 | 0.90 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND          |                 | 4.6 | 1.1  | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND          |                 | 4.6 | 1.2  | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| 6:2 FTS  | ND          |                 | 4.6 | 2.3  | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| 8:2 FTS  | ND          |                 | 1.8 | 0.42 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>4.5</b>  |                 | 1.8 | 0.49 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:17 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 117       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| 13C5 PFPeA       | 116       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| 13C2 PFHxA       | 119       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| 13C4 PFHpA       | 124       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| 13C4 PFOA        | 128       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| 13C5 PFNA        | 122       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| 13C2 PFDA        | 123       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| 13C2 PFUnA       | 125       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| 13C2 PFDoA       | 124       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| 13C2 PFTeDA      | 114       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| 13C3 PFBS        | 121       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| 18O2 PFHxS       | 124       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| 13C4 PFOS        | 120       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| 13C8 FOSA        | 116       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| d3-NMeFOSAA      | 133       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| d5-NEtFOSAA      | 144       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| M2-6:2 FTS       | 128       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:17 | 1       |
| M2-8:2 FTS       | 124       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:17 | 1       |

EMPC = Estimated Maximum Potential Concentration  
CLC 2/29/2022

Eurofins Sacramento



# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

**Client Sample ID: 52-51**  
**Date Collected: 02/03/22 15:45**  
**Date Received: 02/07/22 09:30**

**Lab Sample ID: 320-84484-12**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result      | Qualifier       | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|-------------|-----------------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND          |                 | 4.3 | 2.1  | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND          |                 | 1.7 | 0.42 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| <b>Perfluorohexanoic acid (PFHxA)</b>                    | <b>0.90</b> | <b>J</b>        | 1.7 | 0.50 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| <b>Perfluoroheptanoic acid (PFHpA)</b>                   | <b>1.8</b>  |                 | 1.7 | 0.21 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>                     | <b>19</b>   |                 | 1.7 | 0.73 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND          |                 | 1.7 | 0.23 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND          |                 | 1.7 | 0.27 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND          |                 | 1.7 | 0.95 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND          |                 | 1.7 | 0.47 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND          |                 | 1.7 | 1.1  | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND          |                 | 1.7 | 0.63 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| <b>Perfluorobutanesulfonic acid (PFBS)</b>               | <b>2.1</b>  |                 | 1.7 | 0.17 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| <b>Perfluorohexanesulfonic acid (PFHxS)</b>              | <b>3.1</b>  |                 | 1.7 | 0.49 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND          |                 | 1.7 | 0.16 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| <b>Perfluorooctanesulfonic acid (PFOS)</b>               | <b>1.9</b>  | <b>I J EMPC</b> | 1.7 | 0.46 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND          |                 | 1.7 | 0.28 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| <b>Perfluorooctanesulfonamide (FOSA)</b>                 | <b>1.2</b>  | <b>J</b>        | 1.7 | 0.84 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND          |                 | 4.3 | 1.0  | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND          |                 | 4.3 | 1.1  | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| 6:2 FTS  | ND          |                 | 4.3 | 2.1  | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| 8:2 FTS  | ND          |                 | 1.7 | 0.40 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>21</b>   |                 | 1.7 | 0.46 | ng/L |   | 02/09/22 19:07 | 02/14/22 23:49 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 113       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| 13C5 PFPeA       | 125       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| 13C2 PFHxA       | 121       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| 13C4 PFHpA       | 125       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| 13C4 PFOA        | 118       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| 13C5 PFNA        | 126       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| 13C2 PFDA        | 116       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| 13C2 PFUnA       | 128       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| 13C2 PFDoA       | 129       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| 13C2 PFTeDA      | 130       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| 13C3 PFBS        | 117       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| 18O2 PFHxS       | 121       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| 13C4 PFOS        | 122       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| 13C8 FOSA        | 118       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| d3-NMeFOSAA      | 133       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| d5-NEtFOSAA      | 144       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| M2-6:2 FTS       | 123       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:49 | 1       |
| M2-8:2 FTS       | 117       |           | 25 - 150 | 02/09/22 19:07 | 02/14/22 23:49 | 1       |

EMPC = Estimated Maximum Potential Concentration  
 CLC 2/29/2022

Eurofins Sacramento



# Isotope Dilution Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID      | Client Sample ID   | PFBA<br>(25-150) | PFPeA<br>(25-150) | PFHxA<br>(25-150) | C4PFHA<br>(25-150) | PFOA<br>(25-150) | PFNA<br>(25-150) | PFDA<br>(25-150) | PFUnA<br>(25-150) |
|--------------------|--------------------|------------------|-------------------|-------------------|--------------------|------------------|------------------|------------------|-------------------|
| 320-84484-1        | 52-50              | 119              | 121               | 122               | 124                | 125              | 120              | 121              | 132               |
| 320-84484-1 MS     | 52-50              | 109              | 109               | 109               | 112                | 121              | 114              | 116              | 120               |
| 320-84484-1 MSD    | 52-50              | 110              | 118               | 118               | 117                | 118              | 118              | 116              | 123               |
| 320-84484-2        | 52-54              | 117              | 122               | 122               | 120                | 119              | 120              | 127              | 136               |
| 320-84484-5        | DUP01              | 116              | 119               | 119               | 118                | 126              | 119              | 123              | 119               |
| 320-84484-6        | 46-63A             | 125              | 124               | 121               | 125                | 118              | 124              | 127              | 108               |
| 320-84484-6 - DL   | 46-63A             |                  |                   |                   |                    |                  |                  |                  |                   |
| 320-84484-7        | DUP02              | 106              | 111               | 111               | 113                | 118              | 115              | 111              | 93                |
| 320-84484-7 - DL   | DUP02              |                  |                   |                   |                    |                  |                  |                  |                   |
| 320-84484-8        | 52-23              | 112              | 118               | 116               | 114                | 120              | 119              | 121              | 127               |
| 320-84484-10       | 52-57              | 117              | 116               | 119               | 124                | 128              | 122              | 123              | 125               |
| 320-84484-12       | 52-51              | 113              | 125               | 121               | 125                | 118              | 126              | 116              | 128               |
| LCS 320-564692/2-A | Lab Control Sample | 106              | 112               | 116               | 119                | 116              | 123              | 120              | 122               |
| MB 320-564692/1-A  | Method Blank       | 100              | 111               | 113               | 118                | 119              | 117              | 120              | 123               |

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID      | Client Sample ID   | PFDaA<br>(25-150) | PFTDA<br>(25-150) | C3PFBS<br>(25-150) | PFHxS<br>(25-150) | PFOS<br>(25-150) | PFOSA<br>(25-150) | d3NMFOS<br>(25-150) | d5NEFOS<br>(25-150) |
|--------------------|--------------------|-------------------|-------------------|--------------------|-------------------|------------------|-------------------|---------------------|---------------------|
| 320-84484-1        | 52-50              | 128               | 123               | 122                | 113               | 133              | 119               | 131                 | 151 *5+             |
| 320-84484-1 MS     | 52-50              | 115               | 117               | 115                | 108               | 114              | 107               | 126                 | 139                 |
| 320-84484-1 MSD    | 52-50              | 120               | 114               | 113                | 115               | 122              | 113               | 123                 | 132                 |
| 320-84484-2        | 52-54              | 128               | 127               | 116                | 120               | 123              | 124               | 133                 | 144                 |
| 320-84484-5        | DUP01              | 122               | 114               | 114                | 115               | 120              | 114               | 126                 | 143                 |
| 320-84484-6        | 46-63A             | 89                | 83                | 125                | 133               | 124              | 119               | 123                 |                     |
| 320-84484-6 - DL   | 46-63A             |                   |                   |                    |                   |                  |                   |                     | 123                 |
| 320-84484-7        | DUP02              | 79                | 72                | 115                | 111               | 116              | 99                | 100                 |                     |
| 320-84484-7 - DL   | DUP02              |                   |                   |                    |                   |                  |                   |                     | 118                 |
| 320-84484-8        | 52-23              | 129               | 114               | 124                | 115               | 123              | 114               | 134                 | 148                 |
| 320-84484-10       | 52-57              | 124               | 114               | 121                | 124               | 120              | 116               | 133                 | 144                 |
| 320-84484-12       | 52-51              | 129               | 130               | 117                | 121               | 122              | 118               | 133                 | 144                 |
| LCS 320-564692/2-A | Lab Control Sample | 111               | 104               | 111                | 115               | 122              | 107               | 158 *5+             | 166 *5+             |
| MB 320-564692/1-A  | Method Blank       | 112               | 100               | 111                | 113               | 121              | 110               | 163 *5+             | 170 *5+             |

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID      | Client Sample ID   | M262FTS<br>(25-150) | M282FTS<br>(25-150) |
|--------------------|--------------------|---------------------|---------------------|
| 320-84484-1        | 52-50              | 115                 | 127                 |
| 320-84484-1 MS     | 52-50              | 109                 | 117                 |
| 320-84484-1 MSD    | 52-50              | 122                 | 121                 |
| 320-84484-2        | 52-54              | 125                 | 124                 |
| 320-84484-5        | DUP01              | 119                 | 116                 |
| 320-84484-6        | 46-63A             | 117                 | 127                 |
| 320-84484-6 - DL   | 46-63A             |                     |                     |
| 320-84484-7        | DUP02              | 105                 | 102                 |
| 320-84484-7 - DL   | DUP02              |                     |                     |
| 320-84484-8        | 52-23              | 127                 | 119                 |
| 320-84484-10       | 52-57              | 128                 | 124                 |
| 320-84484-12       | 52-51              | 123                 | 117                 |
| LCS 320-564692/2-A | Lab Control Sample | 116                 | 108                 |
| MB 320-564692/1-A  | Method Blank       | 115                 | 114                 |

Eurofins Sacramento

# Isotope Dilution Summary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

## Surrogate Legend

---

PFBA = 13C4 PFBA  
PFPeA = 13C5 PFPeA  
PFHxA = 13C2 PFHxA  
C4PFHA = 13C4 PFHpA  
PFOA = 13C4 PFOA  
PFNA = 13C5 PFNA  
PFDA = 13C2 PFDA  
PFUnA = 13C2 PFUnA  
PFDoA = 13C2 PFDoA  
PFTDA = 13C2 PFTeDA  
C3PFBS = 13C3 PFBS  
PFHxS = 18O2 PFHxS  
PFOS = 13C4 PFOS  
PFOSA = 13C8 FOSA  
d3NMFOS = d3-NMeFOSAA  
d5NEFOS = d5-NEtFOSAA  
M262FTS = M2-6:2 FTS  
M282FTS = M2-8:2 FTS

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

**Lab Sample ID: MB 320-564692/1-A**  
**Matrix: Water**  
**Analysis Batch: 565303**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 564692**

| Analyte  | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|  | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluorobutanoic acid (PFBA)                            | ND     |           | 5.0 | 2.4  | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND     |           | 2.0 | 0.49 | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND     |           | 2.0 | 0.58 | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | ND     |           | 2.0 | 0.25 | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| Perfluorooctanoic acid (PFOA)                            | ND     |           | 2.0 | 0.85 | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND     |           | 2.0 | 0.27 | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND     |           | 2.0 | 0.31 | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND     |           | 2.0 | 1.1  | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND     |           | 2.0 | 0.55 | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND     |           | 2.0 | 1.3  | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND     |           | 2.0 | 0.73 | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | ND     |           | 2.0 | 0.20 | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | ND     |           | 2.0 | 0.57 | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND     |           | 2.0 | 0.19 | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | ND     |           | 2.0 | 0.54 | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND     |           | 2.0 | 0.32 | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND     |           | 2.0 | 0.98 | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND     |           | 5.0 | 1.2  | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND     |           | 5.0 | 1.3  | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| 6:2 FTS  | ND     |           | 5.0 | 2.5  | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| 8:2 FTS  | ND     |           | 2.0 | 0.46 | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| Total PFOA and PFOS                                      | ND     |           | 2.0 | 0.54 | ng/L |   | 02/09/22 19:07 | 02/13/22 10:49 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFBA        | 100       |           | 25 - 150 | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| 13C5 PFPeA       | 111       |           | 25 - 150 | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| 13C2 PFHxA       | 113       |           | 25 - 150 | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| 13C4 PFHpA       | 118       |           | 25 - 150 | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| 13C4 PFOA        | 119       |           | 25 - 150 | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| 13C5 PFNA        | 117       |           | 25 - 150 | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| 13C2 PFDA        | 120       |           | 25 - 150 | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| 13C2 PFUnA       | 123       |           | 25 - 150 | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| 13C2 PFDoA       | 112       |           | 25 - 150 | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| 13C2 PFTeDA      | 100       |           | 25 - 150 | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| 13C3 PFBS        | 111       |           | 25 - 150 | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| 18O2 PFHxS       | 113       |           | 25 - 150 | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| 13C4 PFOS        | 121       |           | 25 - 150 | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| 13C8 FOSA        | 110       |           | 25 - 150 | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| d3-NMeFOSAA      | 163       | *5+       | 25 - 150 | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| d5-NEtFOSAA      | 170       | *5+       | 25 - 150 | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| M2-6:2 FTS       | 115       |           | 25 - 150 | 02/09/22 19:07 | 02/13/22 10:49 | 1       |
| M2-8:2 FTS       | 114       |           | 25 - 150 | 02/09/22 19:07 | 02/13/22 10:49 | 1       |

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-564692/2-A**  
**Matrix: Water**  
**Analysis Batch: 565303**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 564692**

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|--|-------------|------------|---------------|------|---|------|--------------|
| Perfluorobutanoic acid (PFBA)                            | 40.0        | 38.7       |               | ng/L |   | 97   | 76 - 136     |
| Perfluoropentanoic acid (PFPeA)                          | 40.0        | 36.0       |               | ng/L |   | 90   | 71 - 131     |
| Perfluorohexanoic acid (PFHxA)                           | 40.0        | 35.1       |               | ng/L |   | 88   | 73 - 133     |
| Perfluoroheptanoic acid (PFHpA)                          | 40.0        | 35.6       |               | ng/L |   | 89   | 72 - 132     |
| Perfluorooctanoic acid (PFOA)                            | 40.0        | 36.3       |               | ng/L |   | 91   | 70 - 130     |
| Perfluorononanoic acid (PFNA)                            | 40.0        | 36.5       |               | ng/L |   | 91   | 75 - 135     |
| Perfluorodecanoic acid (PFDA)                            | 40.0        | 34.5       |               | ng/L |   | 86   | 76 - 136     |
| Perfluoroundecanoic acid (PFUnA)                         | 40.0        | 35.9       |               | ng/L |   | 90   | 68 - 128     |
| Perfluorododecanoic acid (PFDoA)                         | 40.0        | 39.1       |               | ng/L |   | 98   | 71 - 131     |
| Perfluorotridecanoic acid (PFTriA)                       | 40.0        | 42.0       |               | ng/L |   | 105  | 71 - 131     |
| Perfluorotetradecanoic acid (PFTeA)                      | 40.0        | 36.0       |               | ng/L |   | 90   | 70 - 130     |
| Perfluorobutanesulfonic acid (PFBS)                      | 35.4        | 32.4       |               | ng/L |   | 92   | 67 - 127     |
| Perfluorohexanesulfonic acid (PFHxS)                     | 36.4        | 31.3       |               | ng/L |   | 86   | 59 - 119     |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 38.1        | 33.4       |               | ng/L |   | 88   | 76 - 136     |
| Perfluorooctanesulfonic acid (PFOS)                      | 37.1        | 32.3       |               | ng/L |   | 87   | 70 - 130     |
| Perfluorodecanesulfonic acid (PFDS)                      | 38.6        | 32.0       |               | ng/L |   | 83   | 71 - 131     |
| Perfluorooctanesulfonamide (FOSA)                        | 40.0        | 41.5       |               | ng/L |   | 104  | 73 - 133     |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 40.0        | 38.0       |               | ng/L |   | 95   | 76 - 136     |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | 40.0        | 35.3       |               | ng/L |   | 88   | 76 - 136     |
| 6:2 FTS  | 37.9        | 31.5       |               | ng/L |   | 83   | 59 - 175     |
| 8:2 FTS  | 38.3        | 37.0       |               | ng/L |   | 97   | 75 - 135     |

| Isotope Dilution | LCS LCS   |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFBA        | 106       |           | 25 - 150 |
| 13C5 PFPeA       | 112       |           | 25 - 150 |
| 13C2 PFHxA       | 116       |           | 25 - 150 |
| 13C4 PFHpA       | 119       |           | 25 - 150 |
| 13C4 PFOA        | 116       |           | 25 - 150 |
| 13C5 PFNA        | 123       |           | 25 - 150 |
| 13C2 PFDA        | 120       |           | 25 - 150 |
| 13C2 PFUnA       | 122       |           | 25 - 150 |
| 13C2 PFDoA       | 111       |           | 25 - 150 |
| 13C2 PFTeA       | 104       |           | 25 - 150 |
| 13C3 PFBS        | 111       |           | 25 - 150 |
| 18O2 PFHxS       | 115       |           | 25 - 150 |
| 13C4 PFOS        | 122       |           | 25 - 150 |
| 13C8 FOSA        | 107       |           | 25 - 150 |
| d3-NMeFOSAA      | 158       | *5+       | 25 - 150 |
| d5-NEtFOSAA      | 166       | *5+       | 25 - 150 |

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-564692/2-A**  
**Matrix: Water**  
**Analysis Batch: 565303**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 564692**

| <i>Isotope Dilution</i> | <i>LCS</i>       | <i>LCS</i>       | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| M2-6:2 FTS              | 116              |                  | 25 - 150      |
| M2-8:2 FTS              | 108              |                  | 25 - 150      |

**Lab Sample ID: 320-84484-1 MS**  
**Matrix: Water**  
**Analysis Batch: 565970**

**Client Sample ID: 52-50**  
**Prep Type: Total/NA**  
**Prep Batch: 564692**

| <i>Analyte</i>   | <i>Sample</i> | <i>Sample</i>    | <i>Spike</i> | <i>MS</i>     | <i>MS</i>        | <i>Unit</i> | <i>D</i> | <i>%Rec</i> | <i>%Rec.</i> | <i>Limits</i> |
|--|---------------|------------------|--------------|---------------|------------------|-------------|----------|-------------|--------------|---------------|
|  | <i>Result</i> | <i>Qualifier</i> | <i>Added</i> | <i>Result</i> | <i>Qualifier</i> |             |          |             |              |               |
| Perfluorobutanoic acid (PFBA)                            | ND            |                  | 35.0         | 37.2          |                  | ng/L        |          | 106         |              | 76 - 136      |
| Perfluoropentanoic acid (PFPeA)                          | 0.47          | J                | 35.0         | 31.8          |                  | ng/L        |          | 90          |              | 71 - 131      |
| Perfluorohexanoic acid (PFHxA)                           | 2.3           |                  | 35.0         | 34.8          |                  | ng/L        |          | 93          |              | 73 - 133      |
| Perfluoroheptanoic acid (PFHpA)                          | 3.4           |                  | 35.0         | 34.6          |                  | ng/L        |          | 89          |              | 72 - 132      |
| Perfluorooctanoic acid (PFOA)                            | 35            |                  | 35.0         | 66.1          |                  | ng/L        |          | 89          |              | 70 - 130      |
| Perfluorononanoic acid (PFNA)                            | ND            |                  | 35.0         | 31.0          |                  | ng/L        |          | 89          |              | 75 - 135      |
| Perfluorodecanoic acid (PFDA)                            | ND            |                  | 35.0         | 31.4          |                  | ng/L        |          | 90          |              | 76 - 136      |
| Perfluoroundecanoic acid (PFUnA)                         | ND            |                  | 35.0         | 31.0          |                  | ng/L        |          | 89          |              | 68 - 128      |
| Perfluorododecanoic acid (PFDoA)                         | ND            |                  | 35.0         | 33.6          |                  | ng/L        |          | 96          |              | 71 - 131      |
| Perfluorotridecanoic acid (PFTriA)                       | ND            |                  | 35.0         | 33.7          |                  | ng/L        |          | 96          |              | 71 - 131      |
| Perfluorotetradecanoic acid (PFTeA)                      | ND            |                  | 35.0         | 31.6          |                  | ng/L        |          | 90          |              | 70 - 130      |
| Perfluorobutanesulfonic acid (PFBS)                      | 3.2           |                  | 31.0         | 29.5          |                  | ng/L        |          | 85          |              | 67 - 127      |
| Perfluorohexanesulfonic acid (PFHxS)                     | 4.9           |                  | 31.9         | 33.3          |                  | ng/L        |          | 89          |              | 59 - 119      |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND            |                  | 33.3         | 30.9          |                  | ng/L        |          | 93          |              | 76 - 136      |
| Perfluorooctanesulfonic acid (PFOS)                      | 2.6           | I                | 32.5         | 30.0          |                  | ng/L        |          | 84          |              | 70 - 130      |
| Perfluorodecanesulfonic acid (PFDS)                      | ND            |                  | 33.8         | 31.2          |                  | ng/L        |          | 92          |              | 71 - 131      |
| Perfluorooctanesulfonamide (FOSA)                        | ND            |                  | 35.0         | 35.1          |                  | ng/L        |          | 100         |              | 73 - 133      |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND            |                  | 35.0         | 29.7          |                  | ng/L        |          | 85          |              | 76 - 136      |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND            |                  | 35.0         | 28.8          |                  | ng/L        |          | 82          |              | 76 - 136      |
| 6:2 FTS  | ND            |                  | 33.2         | 30.4          |                  | ng/L        |          | 91          |              | 59 - 175      |
| 8:2 FTS  | ND            |                  | 33.6         | 30.1          |                  | ng/L        |          | 90          |              | 75 - 135      |

| <i>Isotope Dilution</i> | <i>MS</i>        | <i>MS</i>        | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFBA               | 109              |                  | 25 - 150      |
| 13C5 PFPeA              | 109              |                  | 25 - 150      |
| 13C2 PFHxA              | 109              |                  | 25 - 150      |
| 13C4 PFHpA              | 112              |                  | 25 - 150      |
| 13C4 PFOA               | 121              |                  | 25 - 150      |
| 13C5 PFNA               | 114              |                  | 25 - 150      |
| 13C2 PFDA               | 116              |                  | 25 - 150      |
| 13C2 PFUnA              | 120              |                  | 25 - 150      |
| 13C2 PFDoA              | 115              |                  | 25 - 150      |

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: 320-84484-1 MS**  
**Matrix: Water**  
**Analysis Batch: 565970**

**Client Sample ID: 52-50**  
**Prep Type: Total/NA**  
**Prep Batch: 564692**

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>MS MS Qualifier</i> | <i>Limits</i> |
|-------------------------|------------------|------------------------|---------------|
| 13C2 PFTeDA             | 117              |                        | 25 - 150      |
| 13C3 PFBS               | 115              |                        | 25 - 150      |
| 18O2 PFHxS              | 108              |                        | 25 - 150      |
| 13C4 PFOS               | 114              |                        | 25 - 150      |
| 13C8 FOSA               | 107              |                        | 25 - 150      |
| d3-NMeFOSAA             | 126              |                        | 25 - 150      |
| d5-NEtFOSAA             | 139              |                        | 25 - 150      |
| M2-6:2 FTS              | 109              |                        | 25 - 150      |
| M2-8:2 FTS              | 117              |                        | 25 - 150      |

**Lab Sample ID: 320-84484-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 565970**

**Client Sample ID: 52-50**  
**Prep Type: Total/NA**  
**Prep Batch: 564692**

| <i>Analyte</i>   | <i>Sample Result</i> | <i>Sample Qualifier</i> | <i>Spike Added</i> | <i>MSD Result</i> | <i>MSD Qualifier</i> | <i>Unit</i> | <i>D</i> | <i>%Rec</i> | <i>%Rec. Limits</i> | <i>RPD</i> | <i>RPD Limit</i> |
|--|----------------------|-------------------------|--------------------|-------------------|----------------------|-------------|----------|-------------|---------------------|------------|------------------|
| Perfluorobutanoic acid (PFBA)                            | ND                   |                         | 34.3               | 33.7              |                      | ng/L        |          | 98          | 76 - 136            | 10         | 30               |
| Perfluoropentanoic acid (PFPeA)                          | 0.47                 | J                       | 34.3               | 31.0              |                      | ng/L        |          | 89          | 71 - 131            | 3          | 30               |
| Perfluorohexanoic acid (PFHxA)                           | 2.3                  |                         | 34.3               | 33.0              |                      | ng/L        |          | 90          | 73 - 133            | 5          | 30               |
| Perfluoroheptanoic acid (PFHpA)                          | 3.4                  |                         | 34.3               | 34.8              |                      | ng/L        |          | 92          | 72 - 132            | 1          | 30               |
| Perfluorooctanoic acid (PFOA)                            | 35                   |                         | 34.3               | 68.2              |                      | ng/L        |          | 97          | 70 - 130            | 3          | 30               |
| Perfluorononanoic acid (PFNA)                            | ND                   |                         | 34.3               | 31.0              |                      | ng/L        |          | 91          | 75 - 135            | 0          | 30               |
| Perfluorodecanoic acid (PFDA)                            | ND                   |                         | 34.3               | 30.8              |                      | ng/L        |          | 90          | 76 - 136            | 2          | 30               |
| Perfluoroundecanoic acid (PFUnA)                         | ND                   |                         | 34.3               | 30.9              |                      | ng/L        |          | 90          | 68 - 128            | 1          | 30               |
| Perfluorododecanoic acid (PFDoA)                         | ND                   |                         | 34.3               | 31.5              |                      | ng/L        |          | 92          | 71 - 131            | 7          | 30               |
| Perfluorotridecanoic acid (PFTriA)                       | ND                   |                         | 34.3               | 33.7              |                      | ng/L        |          | 98          | 71 - 131            | 0          | 30               |
| Perfluorotetradecanoic acid (PFTeA)                      | ND                   |                         | 34.3               | 31.0              |                      | ng/L        |          | 90          | 70 - 130            | 2          | 30               |
| Perfluorobutanesulfonic acid (PFBS)                      | 3.2                  |                         | 30.3               | 30.8              |                      | ng/L        |          | 91          | 67 - 127            | 4          | 30               |
| Perfluorohexanesulfonic acid (PFHxS)                     | 4.9                  |                         | 31.2               | 33.2              |                      | ng/L        |          | 91          | 59 - 119            | 0          | 30               |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND                   |                         | 32.6               | 26.7              |                      | ng/L        |          | 82          | 76 - 136            | 15         | 30               |
| Perfluorooctanesulfonic acid (PFOS)                      | 2.6                  | I                       | 31.8               | 29.4              |                      | ng/L        |          | 84          | 70 - 130            | 2          | 30               |
| Perfluorodecanesulfonic acid (PFDS)                      | ND                   |                         | 33.0               | 28.3              |                      | ng/L        |          | 86          | 71 - 131            | 10         | 30               |
| Perfluorooctanesulfonamide (FOSA)                        | ND                   |                         | 34.3               | 32.6              |                      | ng/L        |          | 95          | 73 - 133            | 7          | 30               |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND                   |                         | 34.3               | 32.7              |                      | ng/L        |          | 95          | 76 - 136            | 9          | 30               |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND                   |                         | 34.3               | 31.6              |                      | ng/L        |          | 92          | 76 - 136            | 9          | 30               |
| 6:2 FTS  | ND                   |                         | 32.5               | 29.5              |                      | ng/L        |          | 91          | 59 - 175            | 3          | 30               |
| 8:2 FTS  | ND                   |                         | 32.8               | 29.2              |                      | ng/L        |          | 89          | 75 - 135            | 3          | 30               |

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>MSD MSD Qualifier</i> | <i>Limits</i> |
|-------------------------|------------------|--------------------------|---------------|
| 13C4 PFBA               | 110              |                          | 25 - 150      |
| 13C5 PFPeA              | 118              |                          | 25 - 150      |

Eurofins Sacramento

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-84484-1 MSD

Matrix: Water

Analysis Batch: 565970

Client Sample ID: 52-50

Prep Type: Total/NA

Prep Batch: 564692

| Isotope Dilution | MSD       |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C2 PFHxA       | 118       |           | 25 - 150 |
| 13C4 PFHpA       | 117       |           | 25 - 150 |
| 13C4 PFOA        | 118       |           | 25 - 150 |
| 13C5 PFNA        | 118       |           | 25 - 150 |
| 13C2 PFDA        | 116       |           | 25 - 150 |
| 13C2 PFUnA       | 123       |           | 25 - 150 |
| 13C2 PFDoA       | 120       |           | 25 - 150 |
| 13C2 PFTeDA      | 114       |           | 25 - 150 |
| 13C3 PFBS        | 113       |           | 25 - 150 |
| 18O2 PFHxS       | 115       |           | 25 - 150 |
| 13C4 PFOS        | 122       |           | 25 - 150 |
| 13C8 FOSA        | 113       |           | 25 - 150 |
| d3-NMeFOSAA      | 123       |           | 25 - 150 |
| d5-NEtFOSAA      | 132       |           | 25 - 150 |
| M2-6:2 FTS       | 122       |           | 25 - 150 |
| M2-8:2 FTS       | 121       |           | 25 - 150 |



# QC Association Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

## LCMS

### Prep Batch: 564692

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 320-84484-1        | 52-50              | Total/NA  | Water  | 3535   |            |
| 320-84484-2        | 52-54              | Total/NA  | Water  | 3535   |            |
| 320-84484-5        | DUP01              | Total/NA  | Water  | 3535   |            |
| 320-84484-6        | 46-63A             | Total/NA  | Water  | 3535   |            |
| 320-84484-6 - DL   | 46-63A             | Total/NA  | Water  | 3535   |            |
| 320-84484-7 - DL   | DUP02              | Total/NA  | Water  | 3535   |            |
| 320-84484-7        | DUP02              | Total/NA  | Water  | 3535   |            |
| 320-84484-8        | 52-23              | Total/NA  | Water  | 3535   |            |
| 320-84484-10       | 52-57              | Total/NA  | Water  | 3535   |            |
| 320-84484-12       | 52-51              | Total/NA  | Water  | 3535   |            |
| MB 320-564692/1-A  | Method Blank       | Total/NA  | Water  | 3535   |            |
| LCS 320-564692/2-A | Lab Control Sample | Total/NA  | Water  | 3535   |            |
| 320-84484-1 MS     | 52-50              | Total/NA  | Water  | 3535   |            |
| 320-84484-1 MSD    | 52-50              | Total/NA  | Water  | 3535   |            |

### Analysis Batch: 565303

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method         | Prep Batch |
|--------------------|--------------------|-----------|--------|----------------|------------|
| MB 320-564692/1-A  | Method Blank       | Total/NA  | Water  | 537 (modified) | 564692     |
| LCS 320-564692/2-A | Lab Control Sample | Total/NA  | Water  | 537 (modified) | 564692     |

### Analysis Batch: 565970

| Lab Sample ID   | Client Sample ID | Prep Type | Matrix | Method         | Prep Batch |
|-----------------|------------------|-----------|--------|----------------|------------|
| 320-84484-1     | 52-50            | Total/NA  | Water  | 537 (modified) | 564692     |
| 320-84484-2     | 52-54            | Total/NA  | Water  | 537 (modified) | 564692     |
| 320-84484-5     | DUP01            | Total/NA  | Water  | 537 (modified) | 564692     |
| 320-84484-6     | 46-63A           | Total/NA  | Water  | 537 (modified) | 564692     |
| 320-84484-7     | DUP02            | Total/NA  | Water  | 537 (modified) | 564692     |
| 320-84484-8     | 52-23            | Total/NA  | Water  | 537 (modified) | 564692     |
| 320-84484-10    | 52-57            | Total/NA  | Water  | 537 (modified) | 564692     |
| 320-84484-12    | 52-51            | Total/NA  | Water  | 537 (modified) | 564692     |
| 320-84484-1 MS  | 52-50            | Total/NA  | Water  | 537 (modified) | 564692     |
| 320-84484-1 MSD | 52-50            | Total/NA  | Water  | 537 (modified) | 564692     |

### Analysis Batch: 565995

| Lab Sample ID    | Client Sample ID | Prep Type | Matrix | Method         | Prep Batch |
|------------------|------------------|-----------|--------|----------------|------------|
| 320-84484-6 - DL | 46-63A           | Total/NA  | Water  | 537 (modified) | 564692     |
| 320-84484-7 - DL | DUP02            | Total/NA  | Water  | 537 (modified) | 564692     |

# Lab Chronicle

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

**Client Sample ID: 52-50**  
**Date Collected: 02/03/22 09:40**  
**Date Received: 02/07/22 09:30**

**Lab Sample ID: 320-84484-1**  
**Matrix: Water**

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 286.1 mL       | 10.0 mL      | 564692       | 02/09/22 19:07       | AP      | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 565970       | 02/14/22 21:54       | S1M     | TAL SAC |

**Client Sample ID: 52-54**  
**Date Collected: 02/03/22 10:15**  
**Date Received: 02/07/22 09:30**

**Lab Sample ID: 320-84484-2**  
**Matrix: Water**

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 271.6 mL       | 10.0 mL      | 564692       | 02/09/22 19:07       | AP      | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 565970       | 02/14/22 22:25       | S1M     | TAL SAC |

**Client Sample ID: DUP01**  
**Date Collected: 02/03/22 12:00**  
**Date Received: 02/07/22 09:30**

**Lab Sample ID: 320-84484-5**  
**Matrix: Water**

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 308.7 mL       | 10.0 mL      | 564692       | 02/09/22 19:07       | AP      | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 565970       | 02/14/22 22:36       | S1M     | TAL SAC |

**Client Sample ID: 46-63A**  
**Date Collected: 02/03/22 11:30**  
**Date Received: 02/07/22 09:30**

**Lab Sample ID: 320-84484-6**  
**Matrix: Water**

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 309.1 mL       | 10.0 mL      | 564692       | 02/09/22 19:07       | AP      | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 565970       | 02/14/22 22:46       | S1M     | TAL SAC |
| Total/NA  | Prep       | 3535           | DL  |            | 309.1 mL       | 10.0 mL      | 564692       | 02/09/22 19:07       | AP      | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) | DL  | 10         |                |              | 565995       | 02/15/22 13:30       | RS1     | TAL SAC |

**Client Sample ID: DUP02**  
**Date Collected: 02/03/22 12:00**  
**Date Received: 02/07/22 09:30**

**Lab Sample ID: 320-84484-7**  
**Matrix: Water**

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 294.9 mL       | 10.0 mL      | 564692       | 02/09/22 19:07       | AP      | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 565970       | 02/14/22 22:57       | S1M     | TAL SAC |
| Total/NA  | Prep       | 3535           | DL  |            | 294.9 mL       | 10.0 mL      | 564692       | 02/09/22 19:07       | AP      | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) | DL  | 10         |                |              | 565995       | 02/15/22 13:41       | RS1     | TAL SAC |

**Client Sample ID: 52-23**  
**Date Collected: 02/03/22 13:05**  
**Date Received: 02/07/22 09:30**

**Lab Sample ID: 320-84484-8**  
**Matrix: Water**

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 260.8 mL       | 10.0 mL      | 564692       | 02/09/22 19:07       | AP      | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 565970       | 02/14/22 23:07       | S1M     | TAL SAC |

# Lab Chronicle

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

**Client Sample ID: 52-57**

**Lab Sample ID: 320-84484-10**

Date Collected: 02/03/22 13:45

Matrix: Water

Date Received: 02/07/22 09:30

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 273.4 mL       | 10.0 mL      | 564692       | 02/09/22 19:07       | AP      | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 565970       | 02/14/22 23:17       | S1M     | TAL SAC |

**Client Sample ID: 52-51**

**Lab Sample ID: 320-84484-12**

Date Collected: 02/03/22 15:45

Matrix: Water

Date Received: 02/07/22 09:30

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 290.9 mL       | 10.0 mL      | 564692       | 02/09/22 19:07       | AP      | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 565970       | 02/14/22 23:49       | S1M     | TAL SAC |

**Laboratory References:**

TAL SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# Accreditation/Certification Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

## Laboratory: Eurofins Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | CA00004               | 04-14-22        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte  |
|-----------------|-------------|--------|--|
| 537 (modified)  | 3535        | Water  | 6:2 FTS  |
| 537 (modified)  | 3535        | Water  | 8:2 FTS  |
| 537 (modified)  | 3535        | Water  | N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  |
| 537 (modified)  | 3535        | Water  | N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) |
| 537 (modified)  | 3535        | Water  | Perfluorobutanesulfonic acid (PFBS)                      |
| 537 (modified)  | 3535        | Water  | Perfluorobutanoic acid (PFBA)                            |
| 537 (modified)  | 3535        | Water  | Perfluorodecanesulfonic acid (PFDS)                      |
| 537 (modified)  | 3535        | Water  | Perfluorodecanoic acid (PFDA)                            |
| 537 (modified)  | 3535        | Water  | Perfluorododecanoic acid (PFDoA)                         |
| 537 (modified)  | 3535        | Water  | Perfluoroheptanesulfonic Acid (PFHpS)                    |
| 537 (modified)  | 3535        | Water  | Perfluoroheptanoic acid (PFHpA)                          |
| 537 (modified)  | 3535        | Water  | Perfluorohexanesulfonic acid (PFHxS)                     |
| 537 (modified)  | 3535        | Water  | Perfluorohexanoic acid (PFHxA)                           |
| 537 (modified)  | 3535        | Water  | Perfluorononanoic acid (PFNA)                            |
| 537 (modified)  | 3535        | Water  | Perfluorooctanesulfonamide (FOSA)                        |
| 537 (modified)  | 3535        | Water  | Perfluorooctanesulfonic acid (PFOS)                      |
| 537 (modified)  | 3535        | Water  | Perfluorooctanoic acid (PFOA)                            |
| 537 (modified)  | 3535        | Water  | Perfluoropentanoic acid (PFPeA)                          |
| 537 (modified)  | 3535        | Water  | Perfluorotetradecanoic acid (PFTeA)                      |
| 537 (modified)  | 3535        | Water  | Perfluorotridecanoic acid (PFTriA)                       |
| 537 (modified)  | 3535        | Water  | Perfluoroundecanoic acid (PFUnA)                         |
| 537 (modified)  | 3535        | Water  | Total PFOA and PFOS                                      |

# Method Summary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

| Method         | Method Description           | Protocol | Laboratory |
|----------------|------------------------------|----------|------------|
| 537 (modified) | Fluorinated Alkyl Substances | EPA      | TAL SAC    |
| 3535           | Solid-Phase Extraction (SPE) | SW846    | TAL SAC    |

**Protocol References:**

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Sample Summary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84484-1

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 320-84484-1   | 52-50            | Water  | 02/03/22 09:40 | 02/07/22 09:30 |
| 320-84484-2   | 52-54            | Water  | 02/03/22 10:15 | 02/07/22 09:30 |
| 320-84484-5   | DUP01            | Water  | 02/03/22 12:00 | 02/07/22 09:30 |
| 320-84484-6   | 46-63A           | Water  | 02/03/22 11:30 | 02/07/22 09:30 |
| 320-84484-7   | DUP02            | Water  | 02/03/22 12:00 | 02/07/22 09:30 |
| 320-84484-8   | 52-23            | Water  | 02/03/22 13:05 | 02/07/22 09:30 |
| 320-84484-10  | 52-57            | Water  | 02/03/22 13:45 | 02/07/22 09:30 |
| 320-84484-12  | 52-51            | Water  | 02/03/22 15:45 | 02/07/22 09:30 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Address: Eurofins Sacramento  
 880 Riverside Parkway  
 West Sacramento CA

Chain of Custody Record

589969



Environment Testing  
 TestAmerica

TAL-8210

Regulatory Program:  DW  NPDES  RCRA  Other:

Project Manager: Rebecca Brasnen Site Contact: Louven Tierney Date: 2/3/22 COC No: 1 of 2 COCs  
 Tel/Email: Rebecca.Brasnen@eurofins.com Lab Contact: PEAS 537 Mod 202 Carrier: FDLX  
 Analysis Turnaround Time: com  
 CALENDAR DAYS  WORKING DAYS  
 TAT if different from Below: \_\_\_\_\_  
 2 weeks  1 week  2 days  1 day

| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=Grab) | Matrix | # of Cont. | Filtered Sample (Y/N) | Perform MS / MSD (Y/N) | Sample Specific Notes:  |
|-----------------------|-------------|-------------|------------------------------|--------|------------|-----------------------|------------------------|-------------------------|
| 52-50                 | 2/3/22      | 0940        | G                            | GW     | 6          | M                     | Y                      | extra volume for MS/MSD |
| 52-51                 | 2/3/22      | 1015        | G                            | GW     | 2          | M                     | M                      |                         |
| 52-54-BLK             | 2/3/22      | 1010        | G                            | GW     | 2          | M                     | M                      | HOLD                    |
| 52-50-BLK             | 2/3/22      | 0935        | G                            | GW     | 2          | M                     | M                      | HOLD                    |
| DUPO1                 | 2/3/22      | 1200        | G                            | GW     | 2          | M                     | M                      |                         |
| 46-63A                | 2/3/22      | 1130        | G                            | GW     | 2          | M                     | M                      |                         |
| DUPO2                 | 2/3/22      | 1200        | G                            | GW     | 2          | M                     | M                      |                         |
| 52-23                 | 2/3/22      | 1305        | G                            | GW     | 2          | M                     | M                      |                         |
| 52-23-BLK             | 2/3/22      | 1300        | G                            | GW     | 2          | M                     | M                      | HOLD                    |
| 52-57                 | 2/3/22      | 1345        | G                            | GW     | 2          | M                     | M                      |                         |
| 52-57-BLK             | 2/3/22      | 1340        | G                            | GW     | 2          | M                     | M                      | HOLD                    |
| 52-51                 | 2/3/22      | 1545        | G                            | GW     | 2          | M                     | M                      |                         |



Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other \_\_\_\_\_  
 Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please list any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.  
 Non-Hazard  Flammable  Skin Irritant  Unknown  
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Special Instructions/QC Requirements & Comments:  
HOLD all PEAS blank samples for analysis pending Wood PM approval  
 Custody Seal No.: 1693042/1693043 Cooler Temp. (°C): 1.8 Corr'd: 1.8 Therm ID No.: L04  
 Relinquished by: Louven Tierney Date/Time: 2/3/22 1730 Company: WOOD ETIS  
 Relinquished by: Louven Tierney Date/Time: 2/3/22 1730 Company: WOOD ETIS  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_







# Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 320-84484-1

**Login Number: 84484**

**List Source: Eurofins Sacramento**

**List Number: 1**

**Creator: Maldonado, Letzi A**

| Question   | Answer | Comment         |
|--|--------|-----------------|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | True   |                 |
| The cooler's custody seal, if present, is intact.                                | True   | 1693042/1693043 |
| Sample custody seals, if present, are intact.                                    | N/A    |                 |
| The cooler or samples do not appear to have been compromised or tampered with.   | True   |                 |
| Samples were received on ice.  | True   |                 |
| Cooler Temperature is acceptable.  | True   |                 |
| Cooler Temperature is recorded.  | True   |                 |
| COC is present.  | True   |                 |
| COC is filled out in ink and legible.  | True   |                 |
| COC is filled out with all pertinent information.                                | True   |                 |
| Is the Field Sampler's name present on COC?                                      | False  |                 |
| There are no discrepancies between the containers received and the COC.          | True   |                 |
| Samples are received within Holding Time (excluding tests with immediate HTs)    | True   |                 |
| Sample containers have legible labels.   | True   |                 |
| Containers are not broken or leaking.  | True   |                 |
| Sample collection date/times are provided.                                       | True   |                 |
| Appropriate sample containers are used.  | True   |                 |
| Sample bottles are completely filled.  | True   |                 |
| Sample Preservation Verified.  | N/A    |                 |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True   |                 |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").  | True   |                 |
| Multiphasic samples are not present.   | True   |                 |
| Samples do not require splitting or compositing.                                 | True   |                 |
| Residual Chlorine Checked.   | N/A    |                 |

## ANALYTICAL REPORT

Eurofins Sacramento  
880 Riverside Parkway  
West Sacramento, CA 95605  
Tel: (916)373-5600

Laboratory Job ID: 320-84739-1

Client Project/Site: PFAS - Tex Tech, ME Site

**For:**

Wood E&I Solutions Inc  
511 Congress St. Suite 200  
Portland, Maine 04101

Attn: Ms. Julie Ricardi



*Authorized for release by:  
2/25/2022 2:54:55 PM*

Jill Kellmann, Client Service Manager  
(916)374-4402  
[Jill.Kellmann@Eurofinset.com](mailto:Jill.Kellmann@Eurofinset.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 2  |
| Definitions/Glossary . . . . .     | 3  |
| Case Narrative . . . . .           | 4  |
| Detection Summary . . . . .        | 5  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 13 |
| QC Sample Results . . . . .        | 15 |
| QC Association Summary . . . . .   | 19 |
| Lab Chronicle . . . . .            | 20 |
| Certification Summary . . . . .    | 21 |
| Method Summary . . . . .           | 22 |
| Sample Summary . . . . .           | 23 |
| Chain of Custody . . . . .         | 24 |
| Receipt Checklists . . . . .       | 25 |

# Definitions/Glossary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| I         | Value is EMPC (estimated maximum possible concentration).  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

---

**Job ID: 320-84739-1**

---

**Laboratory: Eurofins Sacramento**

---

## Narrative

---

### Receipt

The samples were received on 2/11/2022 11:20 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.3° C.

### LCMS

Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was above the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte. 52-49 (320-84739-1) and 52-70 (320-84739-9)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### Organic Prep

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-566347.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

## Client Sample ID: 52-49

## Lab Sample ID: 320-84739-1

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorohexanoic acid (PFHxA)       | 2.4    |           | 1.9 | 0.55 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)      | 3.3    |           | 1.9 | 0.24 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 33     |           | 1.9 | 0.81 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)  | 3.0    |           | 1.9 | 0.19 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 4.4    |           | 1.9 | 0.54 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 2.6    | I         | 1.9 | 0.52 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)    | 4.0    |           | 1.9 | 0.94 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                  | 36     |           | 1.9 | 0.52 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 52-74

## Lab Sample ID: 320-84739-3

| Analyte                               | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|---------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorobutanoic acid (PFBA)         | 5.8    |           | 4.8 | 2.3  | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoropentanoic acid (PFPeA)       | 7.2    |           | 1.9 | 0.47 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanoic acid (PFHxA)        | 26     |           | 1.9 | 0.55 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)       | 22     |           | 1.9 | 0.24 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)         | 120    |           | 1.9 | 0.81 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorononanoic acid (PFNA)         | 2.2    |           | 1.9 | 0.26 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorodecanoic acid (PFDA)         | 0.79   | J         | 1.9 | 0.29 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)   | 3.3    |           | 1.9 | 0.19 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS)  | 6.5    |           | 1.9 | 0.54 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanesulfonic Acid (PFHpS) | 1.2    | J         | 1.9 | 0.18 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)   | 30     |           | 1.9 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)     | 4.1    |           | 1.9 | 0.93 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                   | 150    |           | 1.9 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 52-52

## Lab Sample ID: 320-84739-5

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorohexanoic acid (PFHxA)       | 0.70   | J         | 1.9 | 0.55 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)      | 0.66   | J         | 1.9 | 0.24 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 6.3    |           | 1.9 | 0.80 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)  | 0.80   | J         | 1.9 | 0.19 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 1.1    | J         | 1.9 | 0.54 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 2.0    |           | 1.9 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)    | 8.3    |           | 1.9 | 0.92 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                  | 8.3    |           | 1.9 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 52-71

## Lab Sample ID: 320-84739-7

| Analyte                               | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|---------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorobutanoic acid (PFBA)         | 3.2    | J         | 4.8 | 2.3  | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoropentanoic acid (PFPeA)       | 3.5    |           | 1.9 | 0.47 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanoic acid (PFHxA)        | 7.0    |           | 1.9 | 0.55 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)       | 5.8    |           | 1.9 | 0.24 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)         | 25     |           | 1.9 | 0.81 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorononanoic acid (PFNA)         | 0.26   | J         | 1.9 | 0.26 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)   | 2.9    |           | 1.9 | 0.19 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS)  | 2.0    |           | 1.9 | 0.55 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanesulfonic Acid (PFHpS) | 0.22   | J         | 1.9 | 0.18 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)   | 3.6    |           | 1.9 | 0.52 | ng/L | 1       |   | 537 (modified) | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Sacramento



# Detection Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

## Client Sample ID: 52-71 (Continued)

## Lab Sample ID: 320-84739-7

| Analyte                           | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|-----------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorooctanesulfonamide (FOSA) | 2.9    |           | 1.9 | 0.94 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS               | 29     |           | 1.9 | 0.52 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 52-70

## Lab Sample ID: 320-84739-9

| Analyte                               | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|---------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorobutanoic acid (PFBA)         | 3.3    | J         | 4.7 | 2.3  | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoropentanoic acid (PFPeA)       | 3.9    |           | 1.9 | 0.46 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanoic acid (PFHxA)        | 8.6    |           | 1.9 | 0.54 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)       | 6.7    |           | 1.9 | 0.23 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)         | 31     |           | 1.9 | 0.80 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorononanoic acid (PFNA)         | 0.26   | J         | 1.9 | 0.25 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)   | 3.4    |           | 1.9 | 0.19 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS)  | 2.3    |           | 1.9 | 0.54 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanesulfonic Acid (PFHpS) | 0.18   | J         | 1.9 | 0.18 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)   | 4.8    | I         | 1.9 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)     | 5.3    |           | 1.9 | 0.92 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                   | 36     |           | 1.9 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 52-53-1

## Lab Sample ID: 320-84739-11

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 0.30   | J         | 1.9 | 0.24 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 3.4    |           | 1.9 | 0.80 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)  | 0.42   | J         | 1.9 | 0.19 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 0.72   | J         | 1.9 | 0.54 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)    | 4.3    |           | 1.9 | 0.92 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                  | 3.4    |           | 1.9 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

**Client Sample ID: 52-49**  
**Date Collected: 02/10/22 09:45**  
**Date Received: 02/11/22 11:20**

**Lab Sample ID: 320-84739-1**  
**Matrix: Water**

## Method: 537 (modified) - Fluorinated Alkyl Substances

| Analyte  | Result     | Qualifier       | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|------------|-----------------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND         |                 | 4.8 | 2.3  | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND         |                 | 1.9 | 0.47 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| <b>Perfluorohexanoic acid (PFHxA)</b>                    | <b>2.4</b> |                 | 1.9 | 0.55 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| <b>Perfluoroheptanoic acid (PFHpA)</b>                   | <b>3.3</b> |                 | 1.9 | 0.24 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>                     | <b>33</b>  |                 | 1.9 | 0.81 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND         |                 | 1.9 | 0.26 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND         |                 | 1.9 | 0.30 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND         |                 | 1.9 | 1.0  | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND         |                 | 1.9 | 0.52 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND         |                 | 1.9 | 1.2  | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND         |                 | 1.9 | 0.70 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| <b>Perfluorobutanesulfonic acid (PFBS)</b>               | <b>3.0</b> |                 | 1.9 | 0.19 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| <b>Perfluorohexanesulfonic acid (PFHxS)</b>              | <b>4.4</b> |                 | 1.9 | 0.54 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND         |                 | 1.9 | 0.18 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| <b>Perfluorooctanesulfonic acid (PFOS)</b>               | <b>2.6</b> | <b>I J EMPC</b> | 1.9 | 0.52 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND         |                 | 1.9 | 0.31 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| <b>Perfluorooctanesulfonamide (FOSA)</b>                 | <b>4.0</b> |                 | 1.9 | 0.94 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND         |                 | 4.8 | 1.1  | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND         |                 | 4.8 | 1.2  | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| 6:2 FTS  | ND         |                 | 4.8 | 2.4  | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| 8:2 FTS  | ND         |                 | 1.9 | 0.44 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>36</b>  |                 | 1.9 | 0.52 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:06 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 92        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| 13C5 PFPeA       | 92        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| 13C2 PFHxA       | 93        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| 13C4 PFHpA       | 85        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| 13C4 PFOA        | 89        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| 13C5 PFNA        | 92        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| 13C2 PFDA        | 103       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| 13C2 PFUnA       | 101       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| 13C2 PFDoA       | 97        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| 13C2 PFTeDA      | 99        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| 13C3 PFBS        | 97        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| 18O2 PFHxS       | 89        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| 13C4 PFOS        | 92        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| 13C8 FOSA        | 91        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| d3-NMeFOSAA      | 102       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| d5-NEtFOSAA      | 105       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| M2-6:2 FTS       | 111       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:06 | 1       |
| M2-8:2 FTS       | 95        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:06 | 1       |

EMPC = Estimated maximum possible concentration  
CLC 2/28/2022

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

**Client Sample ID: 52-74**

**Lab Sample ID: 320-84739-3**

Date Collected: 02/10/22 10:15

Matrix: Water

Date Received: 02/11/22 11:20

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result     | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|------------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | 5.8        |           | 4.8 | 2.3  | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | 7.2        |           | 1.9 | 0.47 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | 26         |           | 1.9 | 0.55 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | 22         |           | 1.9 | 0.24 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| Perfluorooctanoic acid (PFOA)                            | 120        |           | 1.9 | 0.81 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| Perfluorononanoic acid (PFNA)                            | 2.2        |           | 1.9 | 0.26 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| Perfluorodecanoic acid (PFDA)                            | 0.79       | J         | 1.9 | 0.29 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND         |           | 1.9 | 1.0  | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND         |           | 1.9 | 0.52 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND         |           | 1.9 | 1.2  | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND         |           | 1.9 | 0.69 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | 3.3        |           | 1.9 | 0.19 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | 6.5        |           | 1.9 | 0.54 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 1.2        | J         | 1.9 | 0.18 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | 30         |           | 1.9 | 0.51 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND         |           | 1.9 | 0.30 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | 4.1        |           | 1.9 | 0.93 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND         |           | 4.8 | 1.1  | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND         |           | 4.8 | 1.2  | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| 6:2 FTS  | ND         |           | 4.8 | 2.4  | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| 8:2 FTS  | ND         |           | 1.9 | 0.44 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>150</b> |           | 1.9 | 0.51 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:16 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 114       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| 13C5 PFPeA       | 120       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| 13C2 PFHxA       | 117       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| 13C4 PFHpA       | 115       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| 13C4 PFOA        | 117       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| 13C5 PFNA        | 125       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| 13C2 PFDA        | 134       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| 13C2 PFUnA       | 122       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| 13C2 PFDoA       | 114       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| 13C2 PFTeDA      | 121       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| 13C3 PFBS        | 124       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| 18O2 PFHxS       | 113       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| 13C4 PFOS        | 121       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| 13C8 FOSA        | 111       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| d3-NMeFOSAA      | 122       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| d5-NEtFOSAA      | 128       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| M2-6:2 FTS       | 138       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:16 | 1       |
| M2-8:2 FTS       | 115       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 02:16 | 1       |

No DV Actions  
CLC 2/28/2022

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

**Client Sample ID: 52-52**  
**Date Collected: 02/10/22 10:45**  
**Date Received: 02/11/22 11:20**

**Lab Sample ID: 320-84739-5**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result      | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|-------------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND          |           | 4.7      | 2.3  | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND          |           | 1.9      | 0.46 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| <b>Perfluorohexanoic acid (PFHxA)</b>                    | <b>0.70</b> | <b>J</b>  | 1.9      | 0.55 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| <b>Perfluoroheptanoic acid (PFHpA)</b>                   | <b>0.66</b> | <b>J</b>  | 1.9      | 0.24 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>                     | <b>6.3</b>  |           | 1.9      | 0.80 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND          |           | 1.9      | 0.25 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND          |           | 1.9      | 0.29 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND          |           | 1.9      | 1.0  | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND          |           | 1.9      | 0.52 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND          |           | 1.9      | 1.2  | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND          |           | 1.9      | 0.69 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| <b>Perfluorobutanesulfonic acid (PFBS)</b>               | <b>0.80</b> | <b>J</b>  | 1.9      | 0.19 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| <b>Perfluorohexanesulfonic acid (PFHxS)</b>              | <b>1.1</b>  | <b>J</b>  | 1.9      | 0.54 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND          |           | 1.9      | 0.18 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| <b>Perfluorooctanesulfonic acid (PFOS)</b>               | <b>2.0</b>  |           | 1.9      | 0.51 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND          |           | 1.9      | 0.30 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| <b>Perfluorooctanesulfonamide (FOSA)</b>                 | <b>8.3</b>  |           | 1.9      | 0.92 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND          |           | 4.7      | 1.1  | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND          |           | 4.7      | 1.2  | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| 6:2 FTS  | ND          |           | 4.7      | 2.4  | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| 8:2 FTS  | ND          |           | 1.9      | 0.43 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>8.3</b>  |           | 1.9      | 0.51 | ng/L |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| Isotope Dilution   | %Recovery   | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFBA  | 105         |           | 25 - 150 |      |      |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| 13C5 PFPeA   | 108         |           | 25 - 150 |      |      |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| 13C2 PFHxA   | 100         |           | 25 - 150 |      |      |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| 13C4 PFHpA   | 93          |           | 25 - 150 |      |      |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| 13C4 PFOA  | 103         |           | 25 - 150 |      |      |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| 13C5 PFNA  | 104         |           | 25 - 150 |      |      |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| 13C2 PFDA  | 115         |           | 25 - 150 |      |      |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| 13C2 PFUnA   | 116         |           | 25 - 150 |      |      |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| 13C2 PFDoA   | 104         |           | 25 - 150 |      |      |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| 13C2 PFTeDA  | 111         |           | 25 - 150 |      |      |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| 13C3 PFBS  | 110         |           | 25 - 150 |      |      |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| 18O2 PFHxS   | 96          |           | 25 - 150 |      |      |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| 13C4 PFOS  | 104         |           | 25 - 150 |      |      |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| 13C8 FOSA  | 103         |           | 25 - 150 |      |      |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| d3-NMeFOSAA  | 111         |           | 25 - 150 |      |      |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| d5-NEtFOSAA  | 112         |           | 25 - 150 |      |      |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| M2-6:2 FTS   | 117         |           | 25 - 150 |      |      |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |
| M2-8:2 FTS   | 96          |           | 25 - 150 |      |      |   | 02/16/22 12:58 | 02/19/22 02:26 | 1       |

No DV Actions  
CLC 2/28/2022

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

**Client Sample ID: 52-71**  
Date Collected: 02/10/22 13:10  
Date Received: 02/11/22 11:20

**Lab Sample ID: 320-84739-7**  
Matrix: Water

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result           | Qualifier        | RL            | MDL  | Unit | D | Prepared        | Analyzed        | Dil Fac        |
|--|------------------|------------------|---------------|------|------|---|-----------------|-----------------|----------------|
| Perfluorobutanoic acid (PFBA)                            | 3.2              | J                | 4.8           | 2.3  | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| Perfluoropentanoic acid (PFPeA)                          | 3.5              |                  | 1.9           | 0.47 | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| Perfluorohexanoic acid (PFHxA)                           | 7.0              |                  | 1.9           | 0.55 | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| Perfluoroheptanoic acid (PFHpA)                          | 5.8              |                  | 1.9           | 0.24 | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| Perfluorooctanoic acid (PFOA)                            | 25               |                  | 1.9           | 0.81 | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| Perfluorononanoic acid (PFNA)                            | 0.26             | J                | 1.9           | 0.26 | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| Perfluorodecanoic acid (PFDA)                            | ND               |                  | 1.9           | 0.30 | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| Perfluoroundecanoic acid (PFUnA)                         | ND               |                  | 1.9           | 1.1  | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| Perfluorododecanoic acid (PFDoA)                         | ND               |                  | 1.9           | 0.53 | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| Perfluorotridecanoic acid (PFTriA)                       | ND               |                  | 1.9           | 1.2  | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| Perfluorotetradecanoic acid (PFTeA)                      | ND               |                  | 1.9           | 0.70 | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| Perfluorobutanesulfonic acid (PFBS)                      | 2.9              |                  | 1.9           | 0.19 | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| Perfluorohexanesulfonic acid (PFHxS)                     | 2.0              |                  | 1.9           | 0.55 | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 0.22             | J                | 1.9           | 0.18 | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| Perfluorooctanesulfonic acid (PFOS)                      | 3.6              |                  | 1.9           | 0.52 | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| Perfluorodecanesulfonic acid (PFDS)                      | ND               |                  | 1.9           | 0.31 | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| Perfluorooctanesulfonamide (FOSA)                        | 2.9              |                  | 1.9           | 0.94 | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND               |                  | 4.8           | 1.1  | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND               |                  | 4.8           | 1.2  | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| 6:2 FTS  | ND               |                  | 4.8           | 2.4  | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| 8:2 FTS  | ND               |                  | 1.9           | 0.44 | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| <b>Total PFOA and PFOS</b>                               | <b>29</b>        |                  | 1.9           | 0.52 | ng/L |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| <b>Isotope Dilution</b>                                  | <b>%Recovery</b> | <b>Qualifier</b> | <b>Limits</b> |      |      |   | <b>Prepared</b> | <b>Analyzed</b> | <b>Dil Fac</b> |
| 13C4 PFBA  | 111              |                  | 25 - 150      |      |      |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| 13C5 PFPeA   | 113              |                  | 25 - 150      |      |      |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| 13C2 PFHxA   | 113              |                  | 25 - 150      |      |      |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| 13C4 PFHpA   | 101              |                  | 25 - 150      |      |      |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| 13C4 PFOA  | 106              |                  | 25 - 150      |      |      |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| 13C5 PFNA  | 110              |                  | 25 - 150      |      |      |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| 13C2 PFDA  | 124              |                  | 25 - 150      |      |      |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| 13C2 PFUnA   | 123              |                  | 25 - 150      |      |      |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| 13C2 PFDoA   | 114              |                  | 25 - 150      |      |      |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| 13C2 PFTeDA  | 122              |                  | 25 - 150      |      |      |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| 13C3 PFBS  | 123              |                  | 25 - 150      |      |      |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| 18O2 PFHxS   | 106              |                  | 25 - 150      |      |      |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| 13C4 PFOS  | 112              |                  | 25 - 150      |      |      |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| 13C8 FOSA  | 116              |                  | 25 - 150      |      |      |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| d3-NMeFOSAA  | 120              |                  | 25 - 150      |      |      |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| d5-NEtFOSAA  | 126              |                  | 25 - 150      |      |      |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| M2-6:2 FTS   | 118              |                  | 25 - 150      |      |      |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |
| M2-8:2 FTS   | 106              |                  | 25 - 150      |      |      |   | 02/16/22 12:58  | 02/19/22 02:37  | 1              |

No DV Actions  
CLC 2/28/2022

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

**Client Sample ID: 52-70**  
Date Collected: 02/10/22 13:50  
Date Received: 02/11/22 11:20

**Lab Sample ID: 320-84739-9**  
Matrix: Water

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result    | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|-----------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | 3.3       | J         | 4.7 | 2.3  | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | 3.9       |           | 1.9 | 0.46 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | 8.6       |           | 1.9 | 0.54 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | 6.7       |           | 1.9 | 0.23 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| Perfluorooctanoic acid (PFOA)                            | 31        |           | 1.9 | 0.80 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| Perfluorononanoic acid (PFNA)                            | 0.26      | J         | 1.9 | 0.25 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND        |           | 1.9 | 0.29 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND        |           | 1.9 | 1.0  | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND        |           | 1.9 | 0.52 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND        |           | 1.9 | 1.2  | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND        |           | 1.9 | 0.69 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | 3.4       |           | 1.9 | 0.19 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | 2.3       |           | 1.9 | 0.54 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 0.18      | J         | 1.9 | 0.18 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | 4.8       | I J EMPC  | 1.9 | 0.51 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND        |           | 1.9 | 0.30 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | 5.3       |           | 1.9 | 0.92 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND        |           | 4.7 | 1.1  | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND        |           | 4.7 | 1.2  | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| 6:2 FTS  | ND        |           | 4.7 | 2.3  | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| 8:2 FTS  | ND        |           | 1.9 | 0.43 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>36</b> |           | 1.9 | 0.51 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:07 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 88        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| 13C5 PFPeA       | 95        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| 13C2 PFHxA       | 90        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| 13C4 PFHpA       | 87        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| 13C4 PFOA        | 90        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| 13C5 PFNA        | 93        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| 13C2 PFDA        | 103       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| 13C2 PFUnA       | 101       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| 13C2 PFDoA       | 93        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| 13C2 PFTeDA      | 99        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| 13C3 PFBS        | 93        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| 18O2 PFHxS       | 83        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| 13C4 PFOS        | 87        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| 13C8 FOSA        | 87        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| d3-NMeFOSAA      | 98        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| d5-NEtFOSAA      | 104       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| M2-6:2 FTS       | 107       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:07 | 1       |
| M2-8:2 FTS       | 77        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:07 | 1       |

EMPC = Estimated Maximum Potential Concentration  
CLC 2/28/2022

Eurofins Sacramento



# Client Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

**Client Sample ID: 52-53-1**

**Lab Sample ID: 320-84739-11**

**Date Collected: 02/10/22 14:35**

**Matrix: Water**

**Date Received: 02/11/22 11:20**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result      | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|-------------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanoic acid (PFBA)                            | ND          |           | 4.7 | 2.3  | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND          |           | 1.9 | 0.46 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND          |           | 1.9 | 0.55 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| <b>Perfluoroheptanoic acid (PFHpA)</b>                   | <b>0.30</b> | <b>J</b>  | 1.9 | 0.24 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>                     | <b>3.4</b>  |           | 1.9 | 0.80 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND          |           | 1.9 | 0.25 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND          |           | 1.9 | 0.29 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND          |           | 1.9 | 1.0  | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND          |           | 1.9 | 0.52 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND          |           | 1.9 | 1.2  | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND          |           | 1.9 | 0.69 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| <b>Perfluorobutanesulfonic acid (PFBS)</b>               | <b>0.42</b> | <b>J</b>  | 1.9 | 0.19 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| <b>Perfluorohexanesulfonic acid (PFHxS)</b>              | <b>0.72</b> | <b>J</b>  | 1.9 | 0.54 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND          |           | 1.9 | 0.18 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | ND          |           | 1.9 | 0.51 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND          |           | 1.9 | 0.30 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| <b>Perfluorooctanesulfonamide (FOSA)</b>                 | <b>4.3</b>  |           | 1.9 | 0.92 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND          |           | 4.7 | 1.1  | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND          |           | 4.7 | 1.2  | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| 6:2 FTS  | ND          |           | 4.7 | 2.4  | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| 8:2 FTS  | ND          |           | 1.9 | 0.43 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| <b>Total PFOA and PFOS</b>                               | <b>3.4</b>  |           | 1.9 | 0.51 | ng/L |   | 02/16/22 12:58 | 02/19/22 03:17 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 105       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| 13C5 PFPeA       | 110       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| 13C2 PFHxA       | 103       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| 13C4 PFHpA       | 96        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| 13C4 PFOA        | 102       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| 13C5 PFNA        | 103       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| 13C2 PFDA        | 126       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| 13C2 PFUnA       | 111       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| 13C2 PFDoA       | 103       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| 13C2 PFTeDA      | 112       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| 13C3 PFBS        | 113       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| 18O2 PFHxS       | 98        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| 13C4 PFOS        | 106       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| 13C8 FOSA        | 108       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| d3-NMeFOSAA      | 115       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| d5-NEtFOSAA      | 124       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| M2-6:2 FTS       | 116       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:17 | 1       |
| M2-8:2 FTS       | 102       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 03:17 | 1       |

No DV Actions  
CLC 2/28/2022

Eurofins Sacramento



# Isotope Dilution Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID       | Client Sample ID       | PFBA<br>(25-150) | PFPeA<br>(25-150) | PFHxA<br>(25-150) | C4PFHA<br>(25-150) | PFOA<br>(25-150) | PFNA<br>(25-150) | PFDA<br>(25-150) | PFUnA<br>(25-150) |
|---------------------|------------------------|------------------|-------------------|-------------------|--------------------|------------------|------------------|------------------|-------------------|
| 320-84739-1         | 52-49                  | 92               | 92                | 93                | 85                 | 89               | 92               | 103              | 101               |
| 320-84739-3         | 52-74                  | 114              | 120               | 117               | 115                | 117              | 125              | 134              | 122               |
| 320-84739-5         | 52-52                  | 105              | 108               | 100               | 93                 | 103              | 104              | 115              | 116               |
| 320-84739-7         | 52-71                  | 111              | 113               | 113               | 101                | 106              | 110              | 124              | 123               |
| 320-84739-9         | 52-70                  | 88               | 95                | 90                | 87                 | 90               | 93               | 103              | 101               |
| 320-84739-11        | 52-53-1                | 105              | 110               | 103               | 96                 | 102              | 103              | 126              | 111               |
| LCS 320-566347/2-A  | Lab Control Sample     | 109              | 113               | 104               | 99                 | 102              | 108              | 123              | 118               |
| LCSD 320-566347/3-A | Lab Control Sample Dup | 113              | 120               | 111               | 102                | 107              | 114              | 125              | 130               |
| MB 320-566347/1-A   | Method Blank           | 117              | 114               | 108               | 106                | 112              | 118              | 126              | 115               |

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID       | Client Sample ID       | PFDaA<br>(25-150) | PFTDA<br>(25-150) | C3PFBS<br>(25-150) | PFHxS<br>(25-150) | PFOS<br>(25-150) | PFOSA<br>(25-150) | d3NMFOS<br>(25-150) | d5NEFOS<br>(25-150) |
|---------------------|------------------------|-------------------|-------------------|--------------------|-------------------|------------------|-------------------|---------------------|---------------------|
| 320-84739-1         | 52-49                  | 97                | 99                | 97                 | 89                | 92               | 91                | 102                 | 105                 |
| 320-84739-3         | 52-74                  | 114               | 121               | 124                | 113               | 121              | 111               | 122                 | 128                 |
| 320-84739-5         | 52-52                  | 104               | 111               | 110                | 96                | 104              | 103               | 111                 | 112                 |
| 320-84739-7         | 52-71                  | 114               | 122               | 123                | 106               | 112              | 116               | 120                 | 126                 |
| 320-84739-9         | 52-70                  | 93                | 99                | 93                 | 83                | 87               | 87                | 98                  | 104                 |
| 320-84739-11        | 52-53-1                | 103               | 112               | 113                | 98                | 106              | 108               | 115                 | 124                 |
| LCS 320-566347/2-A  | Lab Control Sample     | 103               | 109               | 107                | 102               | 106              | 104               | 106                 | 120                 |
| LCSD 320-566347/3-A | Lab Control Sample Dup | 122               | 124               | 121                | 113               | 117              | 110               | 124                 | 128                 |
| MB 320-566347/1-A   | Method Blank           | 99                | 110               | 123                | 107               | 115              | 104               | 113                 | 112                 |

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID       | Client Sample ID       | M262FTS<br>(25-150) | M282FTS<br>(25-150) |
|---------------------|------------------------|---------------------|---------------------|
| 320-84739-1         | 52-49                  | 111                 | 95                  |
| 320-84739-3         | 52-74                  | 138                 | 115                 |
| 320-84739-5         | 52-52                  | 117                 | 96                  |
| 320-84739-7         | 52-71                  | 118                 | 106                 |
| 320-84739-9         | 52-70                  | 107                 | 77                  |
| 320-84739-11        | 52-53-1                | 116                 | 102                 |
| LCS 320-566347/2-A  | Lab Control Sample     | 113                 | 100                 |
| LCSD 320-566347/3-A | Lab Control Sample Dup | 122                 | 107                 |
| MB 320-566347/1-A   | Method Blank           | 120                 | 108                 |

#### Surrogate Legend

- PFBA = 13C4 PFBA
- PFPeA = 13C5 PFPeA
- PFHxA = 13C2 PFHxA
- C4PFHA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFUnA = 13C2 PFUnA
- PFDaA = 13C2 PFDaA
- PFTDA = 13C2 PFTeDA
- C3PFBS = 13C3 PFBS
- PFHxS = 18O2 PFHxS
- PFOS = 13C4 PFOS
- PFOSA = 13C8 FOSA

Eurofins Sacramento

# Isotope Dilution Summary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site  
d3NMFOS = d3-NMeFOSAA  
d5NEFOS = d5-NEtFOSAA  
M262FTS = M2-6:2 FTS  
M282FTS = M2-8:2 FTS

Job ID: 320-84739-1

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

**Lab Sample ID: MB 320-566347/1-A**  
**Matrix: Water**  
**Analysis Batch: 566908**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 566347**

| Analyte  | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|  | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluorobutanoic acid (PFBA)                            | ND     |           | 5.0 | 2.4  | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND     |           | 2.0 | 0.49 | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND     |           | 2.0 | 0.58 | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | ND     |           | 2.0 | 0.25 | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| Perfluorooctanoic acid (PFOA)                            | ND     |           | 2.0 | 0.85 | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND     |           | 2.0 | 0.27 | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND     |           | 2.0 | 0.31 | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND     |           | 2.0 | 1.1  | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND     |           | 2.0 | 0.55 | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND     |           | 2.0 | 1.3  | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND     |           | 2.0 | 0.73 | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | ND     |           | 2.0 | 0.20 | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | ND     |           | 2.0 | 0.57 | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND     |           | 2.0 | 0.19 | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | ND     |           | 2.0 | 0.54 | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND     |           | 2.0 | 0.32 | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND     |           | 2.0 | 0.98 | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND     |           | 5.0 | 1.2  | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND     |           | 5.0 | 1.3  | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| 6:2 FTS  | ND     |           | 5.0 | 2.5  | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| 8:2 FTS  | ND     |           | 2.0 | 0.46 | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| Total PFOA and PFOS                                      | ND     |           | 2.0 | 0.54 | ng/L |   | 02/16/22 12:58 | 02/19/22 01:06 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFBA        | 117       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| 13C5 PFPeA       | 114       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| 13C2 PFHxA       | 108       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| 13C4 PFHpA       | 106       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| 13C4 PFOA        | 112       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| 13C5 PFNA        | 118       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| 13C2 PFDA        | 126       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| 13C2 PFUnA       | 115       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| 13C2 PFDoA       | 99        |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| 13C2 PFTeDA      | 110       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| 13C3 PFBS        | 123       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| 18O2 PFHxS       | 107       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| 13C4 PFOS        | 115       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| 13C8 FOSA        | 104       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| d3-NMeFOSAA      | 113       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| d5-NEtFOSAA      | 112       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| M2-6:2 FTS       | 120       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 01:06 | 1       |
| M2-8:2 FTS       | 108       |           | 25 - 150 | 02/16/22 12:58 | 02/19/22 01:06 | 1       |

Eurofins Sacramento

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-566347/2-A**  
**Matrix: Water**  
**Analysis Batch: 566908**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 566347**

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|--|-------------|------------|---------------|------|---|------|--------------|
| Perfluorobutanoic acid (PFBA)                            | 40.0        | 37.1       |               | ng/L |   | 93   | 76 - 136     |
| Perfluoropentanoic acid (PFPeA)                          | 40.0        | 37.9       |               | ng/L |   | 95   | 71 - 131     |
| Perfluorohexanoic acid (PFHxA)                           | 40.0        | 40.2       |               | ng/L |   | 101  | 73 - 133     |
| Perfluoroheptanoic acid (PFHpA)                          | 40.0        | 38.6       |               | ng/L |   | 97   | 72 - 132     |
| Perfluorooctanoic acid (PFOA)                            | 40.0        | 37.9       |               | ng/L |   | 95   | 70 - 130     |
| Perfluorononanoic acid (PFNA)                            | 40.0        | 38.1       |               | ng/L |   | 95   | 75 - 135     |
| Perfluorodecanoic acid (PFDA)                            | 40.0        | 32.7       |               | ng/L |   | 82   | 76 - 136     |
| Perfluoroundecanoic acid (PFUnA)                         | 40.0        | 39.1       |               | ng/L |   | 98   | 68 - 128     |
| Perfluorododecanoic acid (PFDoA)                         | 40.0        | 37.6       |               | ng/L |   | 94   | 71 - 131     |
| Perfluorotridecanoic acid (PFTriA)                       | 40.0        | 41.2       |               | ng/L |   | 103  | 71 - 131     |
| Perfluorotetradecanoic acid (PFTeA)                      | 40.0        | 35.3       |               | ng/L |   | 88   | 70 - 130     |
| Perfluorobutanesulfonic acid (PFBS)                      | 35.4        | 32.8       |               | ng/L |   | 93   | 67 - 127     |
| Perfluorohexanesulfonic acid (PFHxS)                     | 36.4        | 34.1       |               | ng/L |   | 94   | 59 - 119     |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 38.1        | 37.6       |               | ng/L |   | 99   | 76 - 136     |
| Perfluorooctanesulfonic acid (PFOS)                      | 37.1        | 34.5       |               | ng/L |   | 93   | 70 - 130     |
| Perfluorodecanesulfonic acid (PFDS)                      | 38.6        | 36.8       |               | ng/L |   | 96   | 71 - 131     |
| Perfluorooctanesulfonamide (FOSA)                        | 40.0        | 39.7       |               | ng/L |   | 99   | 73 - 133     |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 40.0        | 37.0       |               | ng/L |   | 92   | 76 - 136     |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | 40.0        | 33.6       |               | ng/L |   | 84   | 76 - 136     |
| 6:2 FTS  | 37.9        | 33.6       |               | ng/L |   | 89   | 59 - 175     |
| 8:2 FTS  | 38.3        | 42.8       |               | ng/L |   | 112  | 75 - 135     |

| Isotope Dilution | LCS LCS   |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFBA        | 109       |           | 25 - 150 |
| 13C5 PFPeA       | 113       |           | 25 - 150 |
| 13C2 PFHxA       | 104       |           | 25 - 150 |
| 13C4 PFHpA       | 99        |           | 25 - 150 |
| 13C4 PFOA        | 102       |           | 25 - 150 |
| 13C5 PFNA        | 108       |           | 25 - 150 |
| 13C2 PFDA        | 123       |           | 25 - 150 |
| 13C2 PFUnA       | 118       |           | 25 - 150 |
| 13C2 PFDoA       | 103       |           | 25 - 150 |
| 13C2 PFTeA       | 109       |           | 25 - 150 |
| 13C3 PFBS        | 107       |           | 25 - 150 |
| 18O2 PFHxS       | 102       |           | 25 - 150 |
| 13C4 PFOS        | 106       |           | 25 - 150 |
| 13C8 FOSA        | 104       |           | 25 - 150 |
| d3-NMeFOSAA      | 106       |           | 25 - 150 |
| d5-NEtFOSAA      | 120       |           | 25 - 150 |

Eurofins Sacramento

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-566347/2-A**  
**Matrix: Water**  
**Analysis Batch: 566908**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 566347**

| Isotope Dilution | LCS LCS   |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| M2-6:2 FTS       | 113       |           | 25 - 150 |
| M2-8:2 FTS       | 100       |           | 25 - 150 |

**Lab Sample ID: LCSD 320-566347/3-A**  
**Matrix: Water**  
**Analysis Batch: 566908**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 566347**

| Analyte  | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec.    |     | RPD | Limit |
|--|-------------|-------------|----------------|------|---|------|----------|-----|-----|-------|
|  |             |             |                |      |   |      | Limits   | RPD |     |       |
| Perfluorobutanoic acid (PFBA)                            | 40.0        | 31.6        |                | ng/L |   | 79   | 76 - 136 | 16  | 30  |       |
| Perfluoropentanoic acid (PFPeA)                          | 40.0        | 30.8        |                | ng/L |   | 77   | 71 - 131 | 21  | 30  |       |
| Perfluorohexanoic acid (PFHxA)                           | 40.0        | 34.6        |                | ng/L |   | 86   | 73 - 133 | 15  | 30  |       |
| Perfluoroheptanoic acid (PFHpA)                          | 40.0        | 33.4        |                | ng/L |   | 84   | 72 - 132 | 14  | 30  |       |
| Perfluorooctanoic acid (PFOA)                            | 40.0        | 33.6        |                | ng/L |   | 84   | 70 - 130 | 12  | 30  |       |
| Perfluorononanoic acid (PFNA)                            | 40.0        | 33.1        |                | ng/L |   | 83   | 75 - 135 | 14  | 30  |       |
| Perfluorodecanoic acid (PFDA)                            | 40.0        | 32.0        |                | ng/L |   | 80   | 76 - 136 | 2   | 30  |       |
| Perfluoroundecanoic acid (PFUnA)                         | 40.0        | 33.6        |                | ng/L |   | 84   | 68 - 128 | 15  | 30  |       |
| Perfluorododecanoic acid (PFDoA)                         | 40.0        | 31.9        |                | ng/L |   | 80   | 71 - 131 | 17  | 30  |       |
| Perfluorotridecanoic acid (PFTriA)                       | 40.0        | 33.8        |                | ng/L |   | 84   | 71 - 131 | 20  | 30  |       |
| Perfluorotetradecanoic acid (PFTeA)                      | 40.0        | 31.7        |                | ng/L |   | 79   | 70 - 130 | 11  | 30  |       |
| Perfluorobutanesulfonic acid (PFBS)                      | 35.4        | 27.0        |                | ng/L |   | 76   | 67 - 127 | 19  | 30  |       |
| Perfluorohexanesulfonic acid (PFHxS)                     | 36.4        | 28.1        |                | ng/L |   | 77   | 59 - 119 | 19  | 30  |       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 38.1        | 31.0        |                | ng/L |   | 82   | 76 - 136 | 19  | 30  |       |
| Perfluorooctanesulfonic acid (PFOS)                      | 37.1        | 30.0        |                | ng/L |   | 81   | 70 - 130 | 14  | 30  |       |
| Perfluorodecanesulfonic acid (PFDS)                      | 38.6        | 31.6        |                | ng/L |   | 82   | 71 - 131 | 15  | 30  |       |
| Perfluorooctanesulfonamide (FOSA)                        | 40.0        | 35.8        |                | ng/L |   | 90   | 73 - 133 | 10  | 30  |       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 40.0        | 31.2        |                | ng/L |   | 78   | 76 - 136 | 17  | 30  |       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | 40.0        | 33.1        |                | ng/L |   | 83   | 76 - 136 | 1   | 30  |       |
| 6:2 FTS  | 37.9        | 33.3        |                | ng/L |   | 88   | 59 - 175 | 1   | 30  |       |
| 8:2 FTS  | 38.3        | 36.0        |                | ng/L |   | 94   | 75 - 135 | 17  | 30  |       |

| Isotope Dilution | LCSD LCSD |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFBA        | 113       |           | 25 - 150 |
| 13C5 PFPeA       | 120       |           | 25 - 150 |
| 13C2 PFHxA       | 111       |           | 25 - 150 |
| 13C4 PFHpA       | 102       |           | 25 - 150 |
| 13C4 PFOA        | 107       |           | 25 - 150 |
| 13C5 PFNA        | 114       |           | 25 - 150 |
| 13C2 PFDA        | 125       |           | 25 - 150 |
| 13C2 PFUnA       | 130       |           | 25 - 150 |
| 13C2 PFDoA       | 122       |           | 25 - 150 |

Eurofins Sacramento

# QC Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-566347/3-A

Matrix: Water

Analysis Batch: 566908

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 566347

| <i>Isotope Dilution</i> | <i>LCSD LCSD</i> |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C2 PFTeDA             | 124              |                  | 25 - 150      |
| 13C3 PFBS               | 121              |                  | 25 - 150      |
| 18O2 PFHxS              | 113              |                  | 25 - 150      |
| 13C4 PFOS               | 117              |                  | 25 - 150      |
| 13C8 FOSA               | 110              |                  | 25 - 150      |
| d3-NMeFOSAA             | 124              |                  | 25 - 150      |
| d5-NEtFOSAA             | 128              |                  | 25 - 150      |
| M2-6:2 FTS              | 122              |                  | 25 - 150      |
| M2-8:2 FTS              | 107              |                  | 25 - 150      |

# QC Association Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

## LCMS

### Prep Batch: 566347

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 320-84739-1         | 52-49                  | Total/NA  | Water  | 3535   |            |
| 320-84739-3         | 52-74                  | Total/NA  | Water  | 3535   |            |
| 320-84739-5         | 52-52                  | Total/NA  | Water  | 3535   |            |
| 320-84739-7         | 52-71                  | Total/NA  | Water  | 3535   |            |
| 320-84739-9         | 52-70                  | Total/NA  | Water  | 3535   |            |
| 320-84739-11        | 52-53-1                | Total/NA  | Water  | 3535   |            |
| MB 320-566347/1-A   | Method Blank           | Total/NA  | Water  | 3535   |            |
| LCS 320-566347/2-A  | Lab Control Sample     | Total/NA  | Water  | 3535   |            |
| LCSD 320-566347/3-A | Lab Control Sample Dup | Total/NA  | Water  | 3535   |            |

### Analysis Batch: 566908

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method         | Prep Batch |
|---------------------|------------------------|-----------|--------|----------------|------------|
| 320-84739-1         | 52-49                  | Total/NA  | Water  | 537 (modified) | 566347     |
| 320-84739-3         | 52-74                  | Total/NA  | Water  | 537 (modified) | 566347     |
| 320-84739-5         | 52-52                  | Total/NA  | Water  | 537 (modified) | 566347     |
| 320-84739-7         | 52-71                  | Total/NA  | Water  | 537 (modified) | 566347     |
| 320-84739-9         | 52-70                  | Total/NA  | Water  | 537 (modified) | 566347     |
| 320-84739-11        | 52-53-1                | Total/NA  | Water  | 537 (modified) | 566347     |
| MB 320-566347/1-A   | Method Blank           | Total/NA  | Water  | 537 (modified) | 566347     |
| LCS 320-566347/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 (modified) | 566347     |
| LCSD 320-566347/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 (modified) | 566347     |



# Lab Chronicle

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

## Client Sample ID: 52-49

Date Collected: 02/10/22 09:45

Date Received: 02/11/22 11:20

## Lab Sample ID: 320-84739-1

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 262 mL         | 10.0 mL      | 566347       | 02/16/22 12:58       | KJW     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 566908       | 02/19/22 02:06       | JY1     | TAL SAC |

## Client Sample ID: 52-74

Date Collected: 02/10/22 10:15

Date Received: 02/11/22 11:20

## Lab Sample ID: 320-84739-3

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 263 mL         | 10.0 mL      | 566347       | 02/16/22 12:58       | KJW     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 566908       | 02/19/22 02:16       | JY1     | TAL SAC |

## Client Sample ID: 52-52

Date Collected: 02/10/22 10:45

Date Received: 02/11/22 11:20

## Lab Sample ID: 320-84739-5

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 265.1 mL       | 10.0 mL      | 566347       | 02/16/22 12:58       | KJW     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 566908       | 02/19/22 02:26       | JY1     | TAL SAC |

## Client Sample ID: 52-71

Date Collected: 02/10/22 13:10

Date Received: 02/11/22 11:20

## Lab Sample ID: 320-84739-7

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 261.4 mL       | 10.0 mL      | 566347       | 02/16/22 12:58       | KJW     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 566908       | 02/19/22 02:37       | JY1     | TAL SAC |

## Client Sample ID: 52-70

Date Collected: 02/10/22 13:50

Date Received: 02/11/22 11:20

## Lab Sample ID: 320-84739-9

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 266.1 mL       | 10.0 mL      | 566347       | 02/16/22 12:58       | KJW     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 566908       | 02/19/22 03:07       | JY1     | TAL SAC |

## Client Sample ID: 52-53-1

Date Collected: 02/10/22 14:35

Date Received: 02/11/22 11:20

## Lab Sample ID: 320-84739-11

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 265 mL         | 10.0 mL      | 566347       | 02/16/22 12:58       | KJW     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 566908       | 02/19/22 03:17       | JY1     | TAL SAC |

### Laboratory References:

TAL SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Eurofins Sacramento

# Accreditation/Certification Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

## Laboratory: Eurofins Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | CA00004               | 04-14-22        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte  |
|-----------------|-------------|--------|--|
| 537 (modified)  | 3535        | Water  | 6:2 FTS  |
| 537 (modified)  | 3535        | Water  | 8:2 FTS  |
| 537 (modified)  | 3535        | Water  | N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  |
| 537 (modified)  | 3535        | Water  | N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) |
| 537 (modified)  | 3535        | Water  | Perfluorobutanesulfonic acid (PFBS)                      |
| 537 (modified)  | 3535        | Water  | Perfluorobutanoic acid (PFBA)                            |
| 537 (modified)  | 3535        | Water  | Perfluorodecanesulfonic acid (PFDS)                      |
| 537 (modified)  | 3535        | Water  | Perfluorodecanoic acid (PFDA)                            |
| 537 (modified)  | 3535        | Water  | Perfluorododecanoic acid (PFDoA)                         |
| 537 (modified)  | 3535        | Water  | Perfluoroheptanesulfonic Acid (PFHpS)                    |
| 537 (modified)  | 3535        | Water  | Perfluoroheptanoic acid (PFHpA)                          |
| 537 (modified)  | 3535        | Water  | Perfluorohexanesulfonic acid (PFHxS)                     |
| 537 (modified)  | 3535        | Water  | Perfluorohexanoic acid (PFHxA)                           |
| 537 (modified)  | 3535        | Water  | Perfluorononanoic acid (PFNA)                            |
| 537 (modified)  | 3535        | Water  | Perfluorooctanesulfonamide (FOSA)                        |
| 537 (modified)  | 3535        | Water  | Perfluorooctanesulfonic acid (PFOS)                      |
| 537 (modified)  | 3535        | Water  | Perfluorooctanoic acid (PFOA)                            |
| 537 (modified)  | 3535        | Water  | Perfluoropentanoic acid (PFPeA)                          |
| 537 (modified)  | 3535        | Water  | Perfluorotetradecanoic acid (PFTeA)                      |
| 537 (modified)  | 3535        | Water  | Perfluorotridecanoic acid (PFTriA)                       |
| 537 (modified)  | 3535        | Water  | Perfluoroundecanoic acid (PFUnA)                         |
| 537 (modified)  | 3535        | Water  | Total PFOA and PFOS                                      |

# Method Summary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

| Method         | Method Description           | Protocol | Laboratory |
|----------------|------------------------------|----------|------------|
| 537 (modified) | Fluorinated Alkyl Substances | EPA      | TAL SAC    |
| 3535           | Solid-Phase Extraction (SPE) | SW846    | TAL SAC    |

**Protocol References:**

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# Sample Summary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-84739-1

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 320-84739-1   | 52-49            | Water  | 02/10/22 09:45 | 02/11/22 11:20 |
| 320-84739-3   | 52-74            | Water  | 02/10/22 10:15 | 02/11/22 11:20 |
| 320-84739-5   | 52-52            | Water  | 02/10/22 10:45 | 02/11/22 11:20 |
| 320-84739-7   | 52-71            | Water  | 02/10/22 13:10 | 02/11/22 11:20 |
| 320-84739-9   | 52-70            | Water  | 02/10/22 13:50 | 02/11/22 11:20 |
| 320-84739-11  | 52-53-1          | Water  | 02/10/22 14:35 | 02/11/22 11:20 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Address: Euofins Test America  
800 Riverside Parkway  
West Sacramento 95605

# Chain of Custody Record 589971

Environment Testing  
TestAmerica

Regulatory Program:  DW  NPDES  RCRA  Other:

TAL-8210

|  |  |   |  |  |  |                                   |  |                         |  |
|--|--|---|--|--|--|-----------------------------------|--|-------------------------|--|
| <b>Client Contact</b>                    |  | <b>Project Manager:</b> <u>Rebecca Bresnan</u>    |  | <b>Site Contact:</b> <u>Lauren Tierney</u> |  | <b>Date:</b> <u>2/10/22</u>       |  | <b>COC No:</b> <u>1</u> |  |
| Company Name: <u>WOOD ETIS</u>           |  | Tel/Email: <u>Rebecca.Bresnan@WOODPLC.COM</u>     |  | Lab Contact:                               |  | Carrier: <u>Fed Ex</u>            |  | of <u>1</u> COCs        |  |
| Address: <u>511 Congress St</u>          |  | <b>Analysis Turnaround Time</b>                   |  |  |  |                                   |  |                         |  |
| City/State/Zip: <u>Portland ME 04101</u> |  | <input checked="" type="checkbox"/> CALENDAR DAYS |  | <input type="checkbox"/> WORKING DAYS      |  | <p>320-84739 Chain of Custody</p> |  |                         |  |
| Phone: <u>207-775-5401</u>               |  | TAT if different from Below _____                 |  |  |  |                                   |  |                         |  |
| Fax:                                     |  | <input checked="" type="checkbox"/> 2 weeks       |  | <input type="checkbox"/> 1 week            |  |                                   |  |                         |  |
| Project Name: <u>TRX Tech</u>            |  | <input type="checkbox"/> 2 days                   |  | <input type="checkbox"/> 1 day             |  |                                   |  |                         |  |
| Site: <u>3616226185.1.3</u>              |  |   |  |  |  |                                   |  |                         |  |
| P O #                                    |  |   |  |  |  |                                   |  |                         |  |

| Sample Identification | Sample Date    | Sample Time | Sample Type<br>(C=Comp, G=Grab) | Matrix    | # of Cont. | Filtered Sample (Y/N) | Perform MS / MSD (Y/N) | Sample Specific Notes: |
|-----------------------|----------------|-------------|---------------------------------|-----------|------------|-----------------------|------------------------|------------------------|
| <u>52-49</u>          | <u>2/10/22</u> | <u>0945</u> | <u>G</u>                        | <u>GW</u> | <u>2</u>   | <u>N</u>              | <u>X</u>               |                        |
| <u>52-49-BLK</u>      | <u>2/10/22</u> | <u>0940</u> | <u>G</u>                        | <u>GW</u> | <u>2</u>   | <u>N</u>              | <u>X</u>               | <u>HOLD</u>            |
| <u>52-74</u>          | <u>2/10/22</u> | <u>1015</u> | <u>G</u>                        | <u>GW</u> | <u>2</u>   | <u>N</u>              | <u>X</u>               | <u>H</u>               |
| <u>52-74-BLK</u>      | <u>2/10/22</u> | <u>1010</u> | <u>G</u>                        | <u>GW</u> | <u>2</u>   | <u>N</u>              | <u>X</u>               | <u>HOLD</u>            |
| <u>52-52</u>          | <u>2/10/22</u> | <u>1045</u> | <u>G</u>                        | <u>GW</u> | <u>2</u>   | <u>N</u>              | <u>X</u>               |                        |
| <u>52-52-BLK</u>      | <u>2/10/22</u> | <u>1040</u> | <u>G</u>                        | <u>GW</u> | <u>2</u>   | <u>N</u>              | <u>X</u>               | <u>HOLD</u>            |
| <u>52-71</u>          | <u>2/10/22</u> | <u>1310</u> | <u>G</u>                        | <u>GW</u> | <u>2</u>   | <u>N</u>              | <u>X</u>               |                        |
| <u>52-71-BLK</u>      | <u>2/10/22</u> | <u>1305</u> | <u>G</u>                        | <u>GW</u> | <u>2</u>   | <u>N</u>              | <u>X</u>               | <u>HOLD</u>            |
| <u>52-70</u>          | <u>2/10/22</u> | <u>1350</u> | <u>G</u>                        | <u>GW</u> | <u>2</u>   | <u>N</u>              | <u>X</u>               |                        |
| <u>52-70-BLK</u>      | <u>2/10/22</u> | <u>1345</u> | <u>G</u>                        | <u>GW</u> | <u>2</u>   | <u>N</u>              | <u>X</u>               | <u>HOLD</u>            |
| <u>52-53-1</u>        | <u>2/10/22</u> | <u>1435</u> | <u>G</u>                        | <u>GW</u> | <u>2</u>   | <u>N</u>              | <u>X</u>               |                        |
| <u>52-53-1-BLK</u>    | <u>2/10/22</u> | <u>1430</u> | <u>G</u>                        | <u>GW</u> | <u>2</u>   | <u>N</u>              | <u>X</u>               | <u>HOLD</u>            |

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

|   |  |   |  |
|---|--|---|--|
| <b>Possible Hazard Identification:</b><br>Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. |  | <b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>   |  |
| <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown                 |  | <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months |  |

**Special Instructions/QC Requirements & Comments:**  
Hold all blanks pending Wood PM approval

|   |  |  |  |   |  |                            |  |
|---|--|--|--|---|--|----------------------------|--|
| Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  | Custody Seal No.: <u>1693045/1693044</u> |  | Cooler Temp. (°C): Obs'd: <u>2.5</u> Corr'd: <u>2.3</u> |  | Therm ID No.: <u>606</u>   |  |
| Relinquished by: <u>Lauren Tierney</u> <i>Lauren Tierney</i>                              |  | Company: <u>Wood</u>                     |  | Date/Time: <u>2/10/22 1630</u>                          |  | Received by: <u>Fed Ex</u> |  |
| Relinquished by:  |  | Company:                                 |  | Date/Time:  |  | Received by: <u>PEISec</u> |  |
| Relinquished by:  |  | Company:                                 |  | Date/Time:  |  | Received in Laboratory by: |  |



# Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 320-84739-1

**Login Number: 84739**

**List Source: Eurofins Sacramento**

**List Number: 1**

**Creator: Nelson, Kym D**

| Question   | Answer | Comment          |
|--|--------|------------------|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | True   |                  |
| The cooler's custody seal, if present, is intact.                                | True   | 1693045, 1693044 |
| Sample custody seals, if present, are intact.                                    | N/A    |                  |
| The cooler or samples do not appear to have been compromised or tampered with.   | True   |                  |
| Samples were received on ice.  | True   |                  |
| Cooler Temperature is acceptable.  | True   |                  |
| Cooler Temperature is recorded.  | True   |                  |
| COC is present.  | True   |                  |
| COC is filled out in ink and legible.  | True   |                  |
| COC is filled out with all pertinent information.                                | True   |                  |
| Is the Field Sampler's name present on COC?                                      | False  |                  |
| There are no discrepancies between the containers received and the COC.          | True   |                  |
| Samples are received within Holding Time (excluding tests with immediate HTs)    | True   |                  |
| Sample containers have legible labels.   | True   |                  |
| Containers are not broken or leaking.  | True   |                  |
| Sample collection date/times are provided.                                       | True   |                  |
| Appropriate sample containers are used.  | True   |                  |
| Sample bottles are completely filled.  | True   |                  |
| Sample Preservation Verified.  | N/A    |                  |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True   |                  |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").  | True   |                  |
| Multiphasic samples are not present.   | True   |                  |
| Samples do not require splitting or compositing.                                 | True   |                  |
| Residual Chlorine Checked.   | N/A    |                  |

## ANALYTICAL REPORT

Eurofins Sacramento  
880 Riverside Parkway  
West Sacramento, CA 95605  
Tel: (916)373-5600

Laboratory Job ID: 320-85064-1

Client Project/Site: PFAS - Tex Tech, ME Site

**For:**

Wood E&I Solutions Inc  
511 Congress St. Suite 200  
Portland, Maine 04101

Attn: Ms. Julie Ricardi



---

*Authorized for release by:*  
3/1/2022 4:36:08 PM

Jill Kellmann, Client Service Manager  
(916)374-4402  
[Jill.Kellmann@Eurofinset.com](mailto:Jill.Kellmann@Eurofinset.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*





# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 2  |
| Definitions/Glossary . . . . .     | 3  |
| Case Narrative . . . . .           | 4  |
| Detection Summary . . . . .        | 5  |
| Client Sample Results . . . . .    | 6  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 16 |
| Sample Summary . . . . .           | 17 |
| Chain of Custody . . . . .         | 18 |
| Receipt Checklists . . . . .       | 19 |

# Definitions/Glossary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85064-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| I         | Value is EMPC (estimated maximum possible concentration).  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85064-1

---

**Job ID: 320-85064-1**

---

**Laboratory: Eurofins Sacramento**

---

## Narrative

---

### Receipt

The samples were received on 2/23/2022 12:38 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.4° C.

### LCMS

Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was above the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte. 52-12 (320-85064-3)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### Organic Prep

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-568483.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85064-1

## Client Sample ID: 52-73

## Lab Sample ID: 320-85064-1

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluorobutanoic acid (PFBA)        | 2.8    | J         | 4.4 | 2.1  | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoropentanoic acid (PFPeA)      | 2.8    |           | 1.7 | 0.43 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanoic acid (PFHxA)       | 2.9    |           | 1.7 | 0.51 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)      | 2.4    |           | 1.7 | 0.22 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 14     |           | 1.7 | 0.74 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)  | 1.7    |           | 1.7 | 0.17 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 2.0    |           | 1.7 | 0.50 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)    | 2.7    |           | 1.7 | 0.86 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                  | 14     |           | 1.7 | 0.47 | ng/L | 1       |   | 537 (modified) | Total/NA  |

## Client Sample ID: 52-12

## Lab Sample ID: 320-85064-3

| Analyte                               | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method         | Prep Type |
|---------------------------------------|--------|-----------|-----|------|------|---------|---|----------------|-----------|
| Perfluoropentanoic acid (PFPeA)       | 1.2    | J         | 1.8 | 0.44 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanoic acid (PFHxA)        | 3.2    |           | 1.8 | 0.53 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanoic acid (PFHpA)       | 3.6    |           | 1.8 | 0.23 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanoic acid (PFOA)         | 29     |           | 1.8 | 0.77 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorobutanesulfonic acid (PFBS)   | 2.3    |           | 1.8 | 0.18 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS)  | 2.7    |           | 1.8 | 0.52 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluoroheptanesulfonic Acid (PFHpS) | 0.19   | J         | 1.8 | 0.17 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)   | 7.8    | I         | 1.8 | 0.49 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Perfluorooctanesulfonamide (FOSA)     | 6.2    |           | 1.8 | 0.89 | ng/L | 1       |   | 537 (modified) | Total/NA  |
| Total PFOA and PFOS                   | 37     |           | 1.8 | 0.49 | ng/L | 1       |   | 537 (modified) | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Sacramento

# Client Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85064-1

**Client Sample ID: 52-73**  
**Date Collected: 02/22/22 09:45**  
**Date Received: 02/23/22 12:38**

**Lab Sample ID: 320-85064-1**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result    | Qualifier | RL         | MDL         | Unit        | D | Prepared              | Analyzed              | Dil Fac  |
|--|-----------|-----------|------------|-------------|-------------|---|-----------------------|-----------------------|----------|
| Perfluorobutanoic acid (PFBA)                            | 2.8       | J         | 4.4        | 2.1         | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| Perfluoropentanoic acid (PFPeA)                          | 2.8       |           | 1.7        | 0.43        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| Perfluorohexanoic acid (PFHxA)                           | 2.9       |           | 1.7        | 0.51        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| Perfluoroheptanoic acid (PFHpA)                          | 2.4       |           | 1.7        | 0.22        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| Perfluorooctanoic acid (PFOA)                            | 14        |           | 1.7        | 0.74        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| Perfluorononanoic acid (PFNA)                            | ND        |           | 1.7        | 0.24        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| Perfluorodecanoic acid (PFDA)                            | ND        |           | 1.7        | 0.27        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| Perfluoroundecanoic acid (PFUnA)                         | ND        |           | 1.7        | 0.96        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| Perfluorododecanoic acid (PFDoA)                         | ND        |           | 1.7        | 0.48        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| Perfluorotridecanoic acid (PFTriA)                       | ND        |           | 1.7        | 1.1         | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| Perfluorotetradecanoic acid (PFTeA)                      | ND        |           | 1.7        | 0.64        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| Perfluorobutanesulfonic acid (PFBS)                      | 1.7       |           | 1.7        | 0.17        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| Perfluorohexanesulfonic acid (PFHxS)                     | 2.0       |           | 1.7        | 0.50        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND        |           | 1.7        | 0.17        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| Perfluorooctanesulfonic acid (PFOS)                      | ND        |           | 1.7        | 0.47        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| Perfluorodecanesulfonic acid (PFDS)                      | ND        |           | 1.7        | 0.28        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| Perfluorooctanesulfonamide (FOSA)                        | 2.7       |           | 1.7        | 0.86        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND        |           | 4.4        | 1.0         | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND        |           | 4.4        | 1.1         | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| 6:2 FTS  | ND        |           | 4.4        | 2.2         | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| 8:2 FTS  | ND        |           | 1.7        | 0.40        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:16        | 1        |
| <b>Total PFOA and PFOS</b>                               | <b>14</b> |           | <b>1.7</b> | <b>0.47</b> | <b>ng/L</b> |   | <b>02/25/22 11:50</b> | <b>02/27/22 23:16</b> | <b>1</b> |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 97        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:16 | 1       |
| 13C5 PFPeA       | 104       |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:16 | 1       |
| 13C2 PFHxA       | 107       |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:16 | 1       |
| 13C4 PFHpA       | 110       |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:16 | 1       |
| 13C4 PFOA        | 106       |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:16 | 1       |
| 13C5 PFNA        | 105       |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:16 | 1       |
| 13C2 PFDA        | 110       |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:16 | 1       |
| 13C2 PFUnA       | 102       |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:16 | 1       |
| 13C2 PFDoA       | 101       |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:16 | 1       |
| 13C2 PFTeDA      | 97        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:16 | 1       |
| 13C3 PFBS        | 117       |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:16 | 1       |
| 18O2 PFHxS       | 112       |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:16 | 1       |
| 13C4 PFOS        | 117       |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:16 | 1       |
| 13C8 FOSA        | 109       |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:16 | 1       |
| d3-NMeFOSAA      | 104       |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:16 | 1       |
| d5-NEtFOSAA      | 106       |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:16 | 1       |
| M2-6:2 FTS       | 109       |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:16 | 1       |
| M2-8:2 FTS       | 101       |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:16 | 1       |

No DV Actions  
 CLC 3/2/2022

# Client Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85064-1

**Client Sample ID: 52-12**  
Date Collected: 02/22/22 10:15  
Date Received: 02/23/22 12:38

**Lab Sample ID: 320-85064-3**  
Matrix: Water

**Method: 537 (modified) - Fluorinated Alkyl Substances**

| Analyte  | Result      | Qualifier       | RL         | MDL         | Unit        | D | Prepared              | Analyzed              | Dil Fac  |
|--|-------------|-----------------|------------|-------------|-------------|---|-----------------------|-----------------------|----------|
| Perfluorobutanoic acid (PFBA)                            | ND          |                 | 4.5        | 2.2         | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| <b>Perfluoropentanoic acid (PFPeA)</b>                   | <b>1.2</b>  | <b>J</b>        | 1.8        | 0.44        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| <b>Perfluorohexanoic acid (PFHxA)</b>                    | <b>3.2</b>  |                 | 1.8        | 0.53        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| <b>Perfluoroheptanoic acid (PFHpA)</b>                   | <b>3.6</b>  |                 | 1.8        | 0.23        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| <b>Perfluorooctanoic acid (PFOA)</b>                     | <b>29</b>   |                 | 1.8        | 0.77        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| Perfluorononanoic acid (PFNA)                            | ND          |                 | 1.8        | 0.25        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| Perfluorodecanoic acid (PFDA)                            | ND          |                 | 1.8        | 0.28        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| Perfluoroundecanoic acid (PFUnA)                         | ND          |                 | 1.8        | 1.0         | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| Perfluorododecanoic acid (PFDoA)                         | ND          |                 | 1.8        | 0.50        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| Perfluorotridecanoic acid (PFTriA)                       | ND          |                 | 1.8        | 1.2         | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| Perfluorotetradecanoic acid (PFTeA)                      | ND          |                 | 1.8        | 0.66        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| <b>Perfluorobutanesulfonic acid (PFBS)</b>               | <b>2.3</b>  |                 | 1.8        | 0.18        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| <b>Perfluorohexanesulfonic acid (PFHxS)</b>              | <b>2.7</b>  |                 | 1.8        | 0.52        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| <b>Perfluoroheptanesulfonic Acid (PFHpS)</b>             | <b>0.19</b> | <b>J</b>        | 1.8        | 0.17        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| <b>Perfluorooctanesulfonic acid (PFOS)</b>               | <b>7.8</b>  | <b>I J EMPC</b> | <b>1.8</b> | <b>0.49</b> | <b>ng/L</b> |   | <b>02/25/22 11:50</b> | <b>02/27/22 23:26</b> | <b>1</b> |
| Perfluorodecanesulfonic acid (PFDS)                      | ND          |                 | 1.8        | 0.29        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| <b>Perfluorooctanesulfonamide (FOSA)</b>                 | <b>6.2</b>  |                 | 1.8        | 0.89        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND          |                 | 4.5        | 1.1         | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND          |                 | 4.5        | 1.2         | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| 6:2 FTS  | ND          |                 | 4.5        | 2.3         | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| 8:2 FTS  | ND          |                 | 1.8        | 0.42        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |
| <b>Total PFOA and PFOS</b>                               | <b>37</b>   |                 | 1.8        | 0.49        | ng/L        |   | 02/25/22 11:50        | 02/27/22 23:26        | 1        |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFBA        | 84        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:26 | 1       |
| 13C5 PFPeA       | 89        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:26 | 1       |
| 13C2 PFHxA       | 91        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:26 | 1       |
| 13C4 PFHpA       | 94        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:26 | 1       |
| 13C4 PFOA        | 92        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:26 | 1       |
| 13C5 PFNA        | 93        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:26 | 1       |
| 13C2 PFDA        | 94        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:26 | 1       |
| 13C2 PFUnA       | 91        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:26 | 1       |
| 13C2 PFDoA       | 88        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:26 | 1       |
| 13C2 PFTeDA      | 88        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:26 | 1       |
| 13C3 PFBS        | 105       |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:26 | 1       |
| 18O2 PFHxS       | 94        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:26 | 1       |
| 13C4 PFOS        | 104       |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:26 | 1       |
| 13C8 FOSA        | 95        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:26 | 1       |
| d3-NMeFOSAA      | 95        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:26 | 1       |
| d5-NEtFOSAA      | 95        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:26 | 1       |
| M2-6:2 FTS       | 91        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:26 | 1       |
| M2-8:2 FTS       | 90        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 23:26 | 1       |

EMPC = Estimated Maximum Possible Concentration  
CLC 3/2/2022

Eurofins Sacramento

# Isotope Dilution Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85064-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID       | Client Sample ID       | PFBA<br>(25-150) | PFPeA<br>(25-150) | PFHxA<br>(25-150) | C4PFHA<br>(25-150) | PFOA<br>(25-150) | PFNA<br>(25-150) | PFDA<br>(25-150) | PFUnA<br>(25-150) |
|---------------------|------------------------|------------------|-------------------|-------------------|--------------------|------------------|------------------|------------------|-------------------|
| 320-85064-1         | 52-73                  | 97               | 104               | 107               | 110                | 106              | 105              | 110              | 102               |
| 320-85064-3         | 52-12                  | 84               | 89                | 91                | 94                 | 92               | 93               | 94               | 91                |
| LCS 320-568483/2-A  | Lab Control Sample     | 93               | 99                | 102               | 104                | 103              | 104              | 107              | 103               |
| LCSD 320-568483/3-A | Lab Control Sample Dup | 93               | 91                | 101               | 101                | 104              | 101              | 104              | 98                |
| MB 320-568483/1-A   | Method Blank           | 59               | 60                | 62                | 68                 | 69               | 70               | 72               | 72                |

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID       | Client Sample ID       | PFDoA<br>(25-150) | PFTDA<br>(25-150) | C3PFBS<br>(25-150) | PFHxS<br>(25-150) | PFOS<br>(25-150) | PFOSA<br>(25-150) | d3NMFOS<br>(25-150) | d5NEFOS<br>(25-150) |
|---------------------|------------------------|-------------------|-------------------|--------------------|-------------------|------------------|-------------------|---------------------|---------------------|
| 320-85064-1         | 52-73                  | 101               | 97                | 117                | 112               | 117              | 109               | 104                 | 106                 |
| 320-85064-3         | 52-12                  | 88                | 88                | 105                | 94                | 104              | 95                | 95                  | 95                  |
| LCS 320-568483/2-A  | Lab Control Sample     | 99                | 98                | 115                | 107               | 115              | 99                | 100                 | 103                 |
| LCSD 320-568483/3-A | Lab Control Sample Dup | 96                | 95                | 108                | 99                | 110              | 95                | 96                  | 96                  |
| MB 320-568483/1-A   | Method Blank           | 75                | 84                | 80                 | 76                | 79               | 71                | 73                  | 82                  |

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID       | Client Sample ID       | M262FTS<br>(25-150) | M282FTS<br>(25-150) |
|---------------------|------------------------|---------------------|---------------------|
| 320-85064-1         | 52-73                  | 109                 | 101                 |
| 320-85064-3         | 52-12                  | 91                  | 90                  |
| LCS 320-568483/2-A  | Lab Control Sample     | 103                 | 94                  |
| LCSD 320-568483/3-A | Lab Control Sample Dup | 94                  | 92                  |
| MB 320-568483/1-A   | Method Blank           | 67                  | 66                  |

#### Surrogate Legend

- PFBA = 13C4 PFBA
- PFPeA = 13C5 PFPeA
- PFHxA = 13C2 PFHxA
- C4PFHA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFUnA = 13C2 PFUnA
- PFDoA = 13C2 PFDoA
- PFTDA = 13C2 PFTeDA
- C3PFBS = 13C3 PFBS
- PFHxS = 18O2 PFHxS
- PFOS = 13C4 PFOS
- PFOSA = 13C8 FOSA
- d3NMFOS = d3-NMeFOSAA
- d5NEFOS = d5-NEtFOSAA
- M262FTS = M2-6:2 FTS
- M282FTS = M2-8:2 FTS



# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85064-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

**Lab Sample ID: MB 320-568483/1-A**  
**Matrix: Water**  
**Analysis Batch: 568941**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 568483**

| Analyte  | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|  | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluorobutanoic acid (PFBA)                            | ND     |           | 5.0 | 2.4  | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| Perfluoropentanoic acid (PFPeA)                          | ND     |           | 2.0 | 0.49 | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| Perfluorohexanoic acid (PFHxA)                           | ND     |           | 2.0 | 0.58 | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| Perfluoroheptanoic acid (PFHpA)                          | ND     |           | 2.0 | 0.25 | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| Perfluorooctanoic acid (PFOA)                            | ND     |           | 2.0 | 0.85 | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| Perfluorononanoic acid (PFNA)                            | ND     |           | 2.0 | 0.27 | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| Perfluorodecanoic acid (PFDA)                            | ND     |           | 2.0 | 0.31 | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| Perfluoroundecanoic acid (PFUnA)                         | ND     |           | 2.0 | 1.1  | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| Perfluorododecanoic acid (PFDoA)                         | ND     |           | 2.0 | 0.55 | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| Perfluorotridecanoic acid (PFTriA)                       | ND     |           | 2.0 | 1.3  | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| Perfluorotetradecanoic acid (PFTeA)                      | ND     |           | 2.0 | 0.73 | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                      | ND     |           | 2.0 | 0.20 | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                     | ND     |           | 2.0 | 0.57 | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | ND     |           | 2.0 | 0.19 | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                      | ND     |           | 2.0 | 0.54 | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| Perfluorodecanesulfonic acid (PFDS)                      | ND     |           | 2.0 | 0.32 | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| Perfluorooctanesulfonamide (FOSA)                        | ND     |           | 2.0 | 0.98 | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND     |           | 5.0 | 1.2  | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | ND     |           | 5.0 | 1.3  | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| 6:2 FTS  | ND     |           | 5.0 | 2.5  | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| 8:2 FTS  | ND     |           | 2.0 | 0.46 | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| Total PFOA and PFOS                                      | ND     |           | 2.0 | 0.54 | ng/L |   | 02/25/22 11:50 | 02/27/22 22:15 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFBA        | 59        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| 13C5 PFPeA       | 60        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| 13C2 PFHxA       | 62        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| 13C4 PFHpA       | 68        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| 13C4 PFOA        | 69        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| 13C5 PFNA        | 70        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| 13C2 PFDA        | 72        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| 13C2 PFUnA       | 72        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| 13C2 PFDoA       | 75        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| 13C2 PFTeDA      | 84        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| 13C3 PFBS        | 80        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| 18O2 PFHxS       | 76        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| 13C4 PFOS        | 79        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| 13C8 FOSA        | 71        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| d3-NMeFOSAA      | 73        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| d5-NEtFOSAA      | 82        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| M2-6:2 FTS       | 67        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 22:15 | 1       |
| M2-8:2 FTS       | 66        |           | 25 - 150 | 02/25/22 11:50 | 02/27/22 22:15 | 1       |

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85064-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-568483/2-A**  
**Matrix: Water**  
**Analysis Batch: 568941**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 568483**

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | Limits   |
|--|-------------|------------|---------------|------|---|------|----------|
| Perfluorobutanoic acid (PFBA)                            | 40.0        | 39.2       |               | ng/L |   | 98   | 76 - 136 |
| Perfluoropentanoic acid (PFPeA)                          | 40.0        | 37.3       |               | ng/L |   | 93   | 71 - 131 |
| Perfluorohexanoic acid (PFHxA)                           | 40.0        | 37.3       |               | ng/L |   | 93   | 73 - 133 |
| Perfluoroheptanoic acid (PFHpA)                          | 40.0        | 36.0       |               | ng/L |   | 90   | 72 - 132 |
| Perfluorooctanoic acid (PFOA)                            | 40.0        | 37.2       |               | ng/L |   | 93   | 70 - 130 |
| Perfluorononanoic acid (PFNA)                            | 40.0        | 37.8       |               | ng/L |   | 94   | 75 - 135 |
| Perfluorodecanoic acid (PFDA)                            | 40.0        | 34.3       |               | ng/L |   | 86   | 76 - 136 |
| Perfluoroundecanoic acid (PFUnA)                         | 40.0        | 39.0       |               | ng/L |   | 98   | 68 - 128 |
| Perfluorododecanoic acid (PFDoA)                         | 40.0        | 38.2       |               | ng/L |   | 95   | 71 - 131 |
| Perfluorotridecanoic acid (PFTriA)                       | 40.0        | 37.5       |               | ng/L |   | 94   | 71 - 131 |
| Perfluorotetradecanoic acid (PFTeA)                      | 40.0        | 35.9       |               | ng/L |   | 90   | 70 - 130 |
| Perfluorobutanesulfonic acid (PFBS)                      | 35.4        | 30.0       |               | ng/L |   | 85   | 67 - 127 |
| Perfluorohexanesulfonic acid (PFHxS)                     | 36.4        | 31.8       |               | ng/L |   | 87   | 59 - 119 |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 38.1        | 33.9       |               | ng/L |   | 89   | 76 - 136 |
| Perfluorooctanesulfonic acid (PFOS)                      | 37.1        | 31.5       |               | ng/L |   | 85   | 70 - 130 |
| Perfluorodecanesulfonic acid (PFDS)                      | 38.6        | 33.0       |               | ng/L |   | 86   | 71 - 131 |
| Perfluorooctanesulfonamide (FOSA)                        | 40.0        | 39.1       |               | ng/L |   | 98   | 73 - 133 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 40.0        | 37.2       |               | ng/L |   | 93   | 76 - 136 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | 40.0        | 35.9       |               | ng/L |   | 90   | 76 - 136 |
| 6:2 FTS  | 37.9        | 34.3       |               | ng/L |   | 91   | 59 - 175 |
| 8:2 FTS  | 38.3        | 37.5       |               | ng/L |   | 98   | 75 - 135 |

| Isotope Dilution | LCS LCS   |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFBA        | 93        |           | 25 - 150 |
| 13C5 PFPeA       | 99        |           | 25 - 150 |
| 13C2 PFHxA       | 102       |           | 25 - 150 |
| 13C4 PFHpA       | 104       |           | 25 - 150 |
| 13C4 PFOA        | 103       |           | 25 - 150 |
| 13C5 PFNA        | 104       |           | 25 - 150 |
| 13C2 PFDA        | 107       |           | 25 - 150 |
| 13C2 PFUnA       | 103       |           | 25 - 150 |
| 13C2 PFDoA       | 99        |           | 25 - 150 |
| 13C2 PFTeA       | 98        |           | 25 - 150 |
| 13C3 PFBS        | 115       |           | 25 - 150 |
| 18O2 PFHxS       | 107       |           | 25 - 150 |
| 13C4 PFOS        | 115       |           | 25 - 150 |
| 13C8 FOSA        | 99        |           | 25 - 150 |
| d3-NMeFOSAA      | 100       |           | 25 - 150 |
| d5-NEtFOSAA      | 103       |           | 25 - 150 |

# QC Sample Results

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85064-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-568483/2-A**  
**Matrix: Water**  
**Analysis Batch: 568941**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 568483**

| Isotope Dilution | LCS       |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| M2-6:2 FTS       | 103       |           | 25 - 150 |
| M2-8:2 FTS       | 94        |           | 25 - 150 |

**Lab Sample ID: LCSD 320-568483/3-A**  
**Matrix: Water**  
**Analysis Batch: 568941**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 568483**

| Analyte  | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec.    |     | RPD | Limit |
|--|-------------|-------------|----------------|------|---|------|----------|-----|-----|-------|
|  |             |             |                |      |   |      | Limits   | RPD |     |       |
| Perfluorobutanoic acid (PFBA)                            | 40.0        | 36.9        |                | ng/L |   | 92   | 76 - 136 | 6   | 30  |       |
| Perfluoropentanoic acid (PFPeA)                          | 40.0        | 39.3        |                | ng/L |   | 98   | 71 - 131 | 5   | 30  |       |
| Perfluorohexanoic acid (PFHxA)                           | 40.0        | 35.1        |                | ng/L |   | 88   | 73 - 133 | 6   | 30  |       |
| Perfluoroheptanoic acid (PFHpA)                          | 40.0        | 37.0        |                | ng/L |   | 92   | 72 - 132 | 3   | 30  |       |
| Perfluorooctanoic acid (PFOA)                            | 40.0        | 35.3        |                | ng/L |   | 88   | 70 - 130 | 5   | 30  |       |
| Perfluorononanoic acid (PFNA)                            | 40.0        | 38.0        |                | ng/L |   | 95   | 75 - 135 | 1   | 30  |       |
| Perfluorodecanoic acid (PFDA)                            | 40.0        | 35.0        |                | ng/L |   | 87   | 76 - 136 | 2   | 30  |       |
| Perfluoroundecanoic acid (PFUnA)                         | 40.0        | 40.3        |                | ng/L |   | 101  | 68 - 128 | 3   | 30  |       |
| Perfluorododecanoic acid (PFDoA)                         | 40.0        | 38.2        |                | ng/L |   | 96   | 71 - 131 | 0   | 30  |       |
| Perfluorotridecanoic acid (PFTriA)                       | 40.0        | 37.4        |                | ng/L |   | 93   | 71 - 131 | 0   | 30  |       |
| Perfluorotetradecanoic acid (PFTeA)                      | 40.0        | 36.0        |                | ng/L |   | 90   | 70 - 130 | 0   | 30  |       |
| Perfluorobutanesulfonic acid (PFBS)                      | 35.4        | 30.4        |                | ng/L |   | 86   | 67 - 127 | 1   | 30  |       |
| Perfluorohexanesulfonic acid (PFHxS)                     | 36.4        | 33.9        |                | ng/L |   | 93   | 59 - 119 | 6   | 30  |       |
| Perfluoroheptanesulfonic Acid (PFHpS)                    | 38.1        | 32.6        |                | ng/L |   | 86   | 76 - 136 | 4   | 30  |       |
| Perfluorooctanesulfonic acid (PFOS)                      | 37.1        | 31.5        |                | ng/L |   | 85   | 70 - 130 | 0   | 30  |       |
| Perfluorodecanesulfonic acid (PFDS)                      | 38.6        | 33.3        |                | ng/L |   | 86   | 71 - 131 | 1   | 30  |       |
| Perfluorooctanesulfonamide (FOSA)                        | 40.0        | 38.4        |                | ng/L |   | 96   | 73 - 133 | 2   | 30  |       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 40.0        | 35.9        |                | ng/L |   | 90   | 76 - 136 | 4   | 30  |       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  | 40.0        | 36.6        |                | ng/L |   | 91   | 76 - 136 | 2   | 30  |       |
| 6:2 FTS  | 37.9        | 34.4        |                | ng/L |   | 91   | 59 - 175 | 0   | 30  |       |
| 8:2 FTS  | 38.3        | 37.2        |                | ng/L |   | 97   | 75 - 135 | 1   | 30  |       |

| Isotope Dilution | LCSD      |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFBA        | 93        |           | 25 - 150 |
| 13C5 PFPeA       | 91        |           | 25 - 150 |
| 13C2 PFHxA       | 101       |           | 25 - 150 |
| 13C4 PFHpA       | 101       |           | 25 - 150 |
| 13C4 PFOA        | 104       |           | 25 - 150 |
| 13C5 PFNA        | 101       |           | 25 - 150 |
| 13C2 PFDA        | 104       |           | 25 - 150 |
| 13C2 PFUnA       | 98        |           | 25 - 150 |
| 13C2 PFDoA       | 96        |           | 25 - 150 |

Eurofins Sacramento

# QC Sample Results

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85064-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-568483/3-A

Matrix: Water

Analysis Batch: 568941

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 568483

| <i>Isotope Dilution</i> | <i>LCSD LCSD</i> |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C2 PFTeDA             | 95               |                  | 25 - 150      |
| 13C3 PFBS               | 108              |                  | 25 - 150      |
| 18O2 PFHxS              | 99               |                  | 25 - 150      |
| 13C4 PFOS               | 110              |                  | 25 - 150      |
| 13C8 FOSA               | 95               |                  | 25 - 150      |
| d3-NMeFOSAA             | 96               |                  | 25 - 150      |
| d5-NEtFOSAA             | 96               |                  | 25 - 150      |
| M2-6:2 FTS              | 94               |                  | 25 - 150      |
| M2-8:2 FTS              | 92               |                  | 25 - 150      |

# QC Association Summary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85064-1

## LCMS

### Prep Batch: 568483

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 320-85064-1         | 52-73                  | Total/NA  | Water  | 3535   |            |
| 320-85064-3         | 52-12                  | Total/NA  | Water  | 3535   |            |
| MB 320-568483/1-A   | Method Blank           | Total/NA  | Water  | 3535   |            |
| LCS 320-568483/2-A  | Lab Control Sample     | Total/NA  | Water  | 3535   |            |
| LCSD 320-568483/3-A | Lab Control Sample Dup | Total/NA  | Water  | 3535   |            |

### Analysis Batch: 568941

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method         | Prep Batch |
|---------------------|------------------------|-----------|--------|----------------|------------|
| 320-85064-1         | 52-73                  | Total/NA  | Water  | 537 (modified) | 568483     |
| 320-85064-3         | 52-12                  | Total/NA  | Water  | 537 (modified) | 568483     |
| MB 320-568483/1-A   | Method Blank           | Total/NA  | Water  | 537 (modified) | 568483     |
| LCS 320-568483/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 (modified) | 568483     |
| LCSD 320-568483/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 (modified) | 568483     |

# Lab Chronicle

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85064-1

## Client Sample ID: 52-73

Date Collected: 02/22/22 09:45

Date Received: 02/23/22 12:38

## Lab Sample ID: 320-85064-1

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 285.8 mL       | 10.0 mL      | 568483       | 02/25/22 11:50       | DVC     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 568941       | 02/27/22 23:16       | S1M     | TAL SAC |

## Client Sample ID: 52-12

Date Collected: 02/22/22 10:15

Date Received: 02/23/22 12:38

## Lab Sample ID: 320-85064-3

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3535           |     |            | 275.5 mL       | 10.0 mL      | 568483       | 02/25/22 11:50       | DVC     | TAL SAC |
| Total/NA  | Analysis   | 537 (modified) |     | 1          |                |              | 568941       | 02/27/22 23:26       | S1M     | TAL SAC |

### Laboratory References:

TAL SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

# Accreditation/Certification Summary

Client: Wood E&I Solutions Inc  
 Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85064-1

## Laboratory: Eurofins Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | CA00004               | 04-14-22        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte  |
|-----------------|-------------|--------|--|
| 537 (modified)  | 3535        | Water  | 6:2 FTS  |
| 537 (modified)  | 3535        | Water  | 8:2 FTS  |
| 537 (modified)  | 3535        | Water  | N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)  |
| 537 (modified)  | 3535        | Water  | N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) |
| 537 (modified)  | 3535        | Water  | Perfluorobutanesulfonic acid (PFBS)                      |
| 537 (modified)  | 3535        | Water  | Perfluorobutanoic acid (PFBA)                            |
| 537 (modified)  | 3535        | Water  | Perfluorodecanesulfonic acid (PFDS)                      |
| 537 (modified)  | 3535        | Water  | Perfluorodecanoic acid (PFDA)                            |
| 537 (modified)  | 3535        | Water  | Perfluorododecanoic acid (PFDoA)                         |
| 537 (modified)  | 3535        | Water  | Perfluoroheptanesulfonic Acid (PFHpS)                    |
| 537 (modified)  | 3535        | Water  | Perfluoroheptanoic acid (PFHpA)                          |
| 537 (modified)  | 3535        | Water  | Perfluorohexanesulfonic acid (PFHxS)                     |
| 537 (modified)  | 3535        | Water  | Perfluorohexanoic acid (PFHxA)                           |
| 537 (modified)  | 3535        | Water  | Perfluorononanoic acid (PFNA)                            |
| 537 (modified)  | 3535        | Water  | Perfluorooctanesulfonamide (FOSA)                        |
| 537 (modified)  | 3535        | Water  | Perfluorooctanesulfonic acid (PFOS)                      |
| 537 (modified)  | 3535        | Water  | Perfluorooctanoic acid (PFOA)                            |
| 537 (modified)  | 3535        | Water  | Perfluoropentanoic acid (PFPeA)                          |
| 537 (modified)  | 3535        | Water  | Perfluorotetradecanoic acid (PFTeA)                      |
| 537 (modified)  | 3535        | Water  | Perfluorotridecanoic acid (PFTriA)                       |
| 537 (modified)  | 3535        | Water  | Perfluoroundecanoic acid (PFUnA)                         |
| 537 (modified)  | 3535        | Water  | Total PFOA and PFOS                                      |



# Method Summary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85064-1

| Method         | Method Description           | Protocol | Laboratory |
|----------------|------------------------------|----------|------------|
| 537 (modified) | Fluorinated Alkyl Substances | EPA      | TAL SAC    |
| 3535           | Solid-Phase Extraction (SPE) | SW846    | TAL SAC    |

**Protocol References:**

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# Sample Summary

Client: Wood E&I Solutions Inc  
Project/Site: PFAS - Tex Tech, ME Site

Job ID: 320-85064-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 320-85064-1   | 52-73            | Water  | 02/22/22 09:45 | 02/23/22 12:38 |
| 320-85064-3   | 52-12            | Water  | 02/22/22 10:15 | 02/23/22 12:38 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# Chain of Custody Record

608080



Environment Testing  
TestAmerica


Address:

TAL-8210

Regulatory Program:  DW  NPDES  RCRA  Other:

Client Contact  
 Company Name: WOOD ET'S  
 Address: 511 Congress St  
 City/State/Zip: Portland ME 04101  
 Phone: 207-775-5401  
 Fax:  
 Project Name: FLEXTECH  
 Site: 3616 276185.1.3  
 PO #

Project Manager: Rebecca Brosnan  
 Tell/Email: Rebecca.Brosnan@WOOD.ET.COM  
 Analysis Turnaround Time:  WORKING DAYS  CALENDAR DAYS  
 TAT if different from Below:  
 2 weeks  
 1 week  
 2 days  
 1 day

| Sample Identification | Sample Date | Sample Time | Sample Type (C-Comp, G-Grab) | Matrix | # of Cont. | Filtered Sample (Y/N) | Perform MS/MSD (Y/N) | Sample Specific Notes:  |
|-----------------------|-------------|-------------|------------------------------|--------|------------|-----------------------|----------------------|---|
| 52-73                 | 2/22/22     | 0945        | G                            | GW     | 2          | N                     | X                    | <br>320-85064 Chain of Custody |
| 52-73-BLK             | 2/22/22     | 0950        | G                            | GW     | 2          | N                     | X                    |   |
| 52-12                 | 2/22/22     | 1015        | G                            | GW     | 2          | N                     | X                    |   |
| 52-12-BLK             | 2/22/22     | 1020        | G                            | GW     | 2          | N                     | X                    |   |

Site Contact: Lauren Tierney  
 Date: 2/22/22  
 Carrier: FedEx  
 Sampler: Lauren Tierney  
 For Lab Use Only:  
 Walk-in Client:  
 Lab Sampling:  
 Job / SDG No.:

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other  
 Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Special Instructions/QC Requirements & Comments:  
 Hold all blank samples pending PM approval, FLEX EX Tracking 5385 4737 9722

Custody Seal No.:  
 Relinquished by: Lauren Tierney  
 Relinquished by:  
 Relinquished by:

Company: WOOD ET'S  
 Date/Time: 2/22/22 1330  
 Company: FLEX EX  
 Date/Time: 2/23/22 1238  
 Company: FLEX EX  
 Date/Time:



# Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 320-85064-1

**Login Number: 85064**

**List Source: Eurofins Sacramento**

**List Number: 1**

**Creator: Her, David A**

| Question  | Answer | Comment |
|---|--------|---------|
| Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.      | True   |         |
| The cooler's custody seal, if present, is intact.   | True   | seal    |
| Sample custody seals, if present, are intact.   | N/A    |         |
| The cooler or samples do not appear to have been compromised or tampered with.                      | True   |         |
| Samples were received on ice.   | True   |         |
| Cooler Temperature is acceptable.   | True   |         |
| Cooler Temperature is recorded.   | True   |         |
| COC is present.   | True   |         |
| COC is filled out in ink and legible.   | True   |         |
| COC is filled out with all pertinent information.   | True   |         |
| Is the Field Sampler's name present on COC?   | True   |         |
| There are no discrepancies between the containers received and the COC.                             | True   |         |
| Samples are received within Holding Time (excluding tests with immediate HTs)                       | True   |         |
| Sample containers have legible labels.  | True   |         |
| Containers are not broken or leaking.   | True   |         |
| Sample collection date/times are provided.  | True   |         |
| Appropriate sample containers are used.   | True   |         |
| Sample bottles are completely filled.   | True   |         |
| Sample Preservation Verified.   | N/A    |         |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs                    | True   |         |
| Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4"). | True   |         |
| Multiphasic samples are not present.  | True   |         |
| Samples do not require splitting or compositing.  | True   |         |
| Residual Chlorine Checked.  | N/A    |         |

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-85998-5  
Client Project/Site: PFAS in Groundwater

For:  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



Authorized for release by:  
6/17/2022 7:58:33 AM

Kelly Bauer, Project Manager  
(717)556-7262  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer".

---

Kelly Bauer  
Project Manager  
6/17/2022 7:58:33 AM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 10 |
| Lab Chronicle . . . . .            | 11 |
| Certification Summary . . . . .    | 12 |
| Method Summary . . . . .           | 13 |
| Sample Summary . . . . .           | 14 |
| Chain of Custody . . . . .         | 15 |
| Receipt Checklists . . . . .       | 16 |



# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-5

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-5

---

## Job ID: 410-85998-5

---

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

### Narrative

---

Job Narrative  
410-85998-5

### Receipt

The samples were received on 6/2/2022 10:23 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.5°C

### PFAS

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-5

**Client Sample ID: 40-18\_20220601**

**Lab Sample ID: 410-85998-5**

No Detections.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: PFAS in Groundwater

Job ID: 410-85998-5

**Client Sample ID: 40-18\_20220601**

**Lab Sample ID: 410-85998-5**

Date Collected: 06/01/22 09:55

Matrix: Water

Date Received: 06/02/22 10:23

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 1.6 | 0.41 | ng/L |   | 06/14/22 09:01 | 06/16/22 19:51 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 1.6 | 0.41 | ng/L |   | 06/14/22 09:01 | 06/16/22 19:51 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 1.6 | 0.41 | ng/L |   | 06/14/22 09:01 | 06/16/22 19:51 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 1.6 | 0.41 | ng/L |   | 06/14/22 09:01 | 06/16/22 19:51 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 1.6 | 0.41 | ng/L |   | 06/14/22 09:01 | 06/16/22 19:51 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.6 | 0.41 | ng/L |   | 06/14/22 09:01 | 06/16/22 19:51 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 105       |           | 31 - 182 | 06/14/22 09:01 | 06/16/22 19:51 | 1       |
| 13C8 PFOA        | 112       |           | 48 - 162 | 06/14/22 09:01 | 06/16/22 19:51 | 1       |
| 13C9 PFNA        | 99        |           | 51 - 167 | 06/14/22 09:01 | 06/16/22 19:51 | 1       |
| 13C3 PFHxS       | 101       |           | 28 - 188 | 06/14/22 09:01 | 06/16/22 19:51 | 1       |
| 13C8 PFOS        | 93        |           | 51 - 159 | 06/14/22 09:01 | 06/16/22 19:51 | 1       |
| 13C6 PFDA        | 98        |           | 49 - 163 | 06/14/22 09:01 | 06/16/22 19:51 | 1       |



# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: PFAS in Groundwater

Job ID: 410-85998-5

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID   | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|--------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                    | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-85998-5        | 40-18_20220601     | 105   | 112                | 99                 | 101                | 93                 | 98                 |
| LCS 410-265235/2-A | Lab Control Sample | 100   | 107                | 101                | 107                | 103                | 107                |
| MB 410-265235/1-A  | Method Blank       | 89  | 92                 | 98                 | 102                | 91                 | 87                 |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: PFAS in Groundwater

Job ID: 410-85998-5

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-265235/1-A**  
**Matrix: Water**  
**Analysis Batch: 266251**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 265235**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 0.829  | J         | 2.0 | 0.50 | ng/L |   | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/14/22 09:01 | 06/16/22 18:42 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 89        |           | 31 - 182 | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| 13C8 PFOA        | 92        |           | 48 - 162 | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| 13C9 PFNA        | 98        |           | 51 - 167 | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| 13C3 PFHxS       | 102       |           | 28 - 188 | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| 13C8 PFOS        | 91        |           | 51 - 159 | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| 13C6 PFDA        | 87        |           | 49 - 163 | 06/14/22 09:01 | 06/16/22 18:42 | 1       |

**Lab Sample ID: LCS 410-265235/2-A**  
**Matrix: Water**  
**Analysis Batch: 266251**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 265235**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 22.4       |               | ng/L |   | 88   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 23.9       |               | ng/L |   | 93   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.7       |               | ng/L |   | 84   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 21.7       |               | ng/L |   | 92   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 22.7       |               | ng/L |   | 89   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 100       |           | 31 - 182 |
| 13C8 PFOA        | 107       |           | 48 - 162 |
| 13C9 PFNA        | 101       |           | 51 - 167 |
| 13C3 PFHxS       | 107       |           | 28 - 188 |
| 13C8 PFOS        | 103       |           | 51 - 159 |
| 13C6 PFDA        | 107       |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-5

## LCMS

### Prep Batch: 265235

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-85998-5        | 40-18_20220601     | Total/NA  | Water  | 537 IDA |            |
| MB 410-265235/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-265235/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 266251

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-85998-5        | 40-18_20220601     | Total/NA  | Water  | 537 IDA | 265235     |
| MB 410-265235/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 265235     |
| LCS 410-265235/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 265235     |





# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-5

**Client Sample ID: 40-18\_20220601**

**Lab Sample ID: 410-85998-5**

**Date Collected: 06/01/22 09:55**

**Matrix: Water**

**Date Received: 06/02/22 10:23**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab  |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 265235       | 06/14/22 09:01       | PMS9    | ELLE |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 266251       | 06/16/22 19:51       | QD9Y    | ELLE |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-5

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-5

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-5

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-85998-5   | 40-18_20220601   | Water  | 06/01/22 09:55 | 06/02/22 10:23 |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Chain of Custody Record



410-85998 Chain of Custody

|  |  |  |  |   |  |  |  |                                     |  |                            |  |                            |  |
|--|--|--|--|---|--|--|--|-------------------------------------|--|----------------------------|--|----------------------------|--|
| <b>Client Information</b>  |  | Sampler: <u>D. Kessler (C. YIGOR)</u>  |  | Lab PM: Bauer, Kelly  |  | COC No: 410-57598-16397.1  |  |                                     |  |                            |  |                            |  |
| Client Contact: Shana Whitney  |  | Phone: <u>603.312.4876</u>   |  | E-Mail: Kelly.Bauer@eLeurofinsus.com                        |  | Page: Page 1 of 1  |  |                                     |  |                            |  |                            |  |
| Company: Sanborn Head & Associates Inc   |  | PWSID:   |  | Analysis Requested  |  | Job #: <u>5197.01</u>  |  |                                     |  |                            |  |                            |  |
| Address: 20 Foundry Street   |  | Due Date Requested:  |  | Field Filtered Sample (Yes or No)<br>PFC_IDA - UCMR3 & PFAS |  | Preservation Codes:<br>A - HCL M - Hexane<br>B - NaOH N - None<br>C - Zn Acetate O - AsNaO2<br>D - Nitric Acid P - Na2O4S<br>E - NaHSO4 R - Na2S2O3<br>F - MeOH S - H2SO4<br>G - Amchlor T - TSP Dodecahydrate<br>H - Ascorbic Acid U - Acetone<br>I - Ice V - MCAA<br>J - DI Water W - pH 4-5<br>K - EDTA Y - Trizma<br>L - EDA Z - other (specify) |  |                                     |  |                            |  |                            |  |
| City: Concord  |  | TAT Requested (days):  |  |   |  |  |  |                                     |  |                            |  |                            |  |
| State, Zip: NH, 03301  |  | Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No |  |   |  |  |  |                                     |  |                            |  |                            |  |
| Phone: <u>603-229-1900</u>   |  | PO #: Purchase Order Requested   |  |   |  |  |  |                                     |  |                            |  |                            |  |
| Email: SWhitney@sanbornhead.com  |  | WO #:  |  |   |  |  |  |                                     |  |                            |  |                            |  |
| Project Name: PFAS in Groundwater  |  | Project #: 41010916  |  |   |  |  |  |                                     |  |                            |  |                            |  |
| Site: <u>5197.01</u>   |  | SSOW#:   |  |   |  |  |  |                                     |  |                            |  |                            |  |
| <b>Sample Identification</b>   |  | Sample Date  |  | Sample Time   |  | Sample Type (C=comp, G=grab)   |  | Matrix (Water, Solid, Tissue, A=As) |  | Total Number of Containers |  | Special Instructions/Note: |  |
| <u>52-1-20220601</u>   |  | <u>6/1/22</u>  |  | <u>13:26</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |                            |  |
| <u>52-79-20220601</u>  |  |  |  | <u>11:55</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |                            |  |
| <u>52-45-20220601</u>  |  |  |  | <u>11:04</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |                            |  |
| <u>52-10-20220601</u>  |  |  |  | <u>10:25</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |                            |  |
| <u>40-18-20220601</u>  |  |  |  | <u>9:55</u>   |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |                            |  |
| <u>FB-01-20220601</u>  |  | <u>6/1/22</u>  |  | <u>12:00</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |                            |  |
| <b>Possible Hazard Identification</b>  |  |  |  |   |  | <b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>  |  |                                     |  |                            |  |                            |  |
| <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological |  |  |  |   |  | <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months   |  |                                     |  |                            |  |                            |  |
| Deliverable Requested: I, II, III, IV, Other (specify)   |  |  |  |   |  | Special Instructions/QC Requirements:  |  |                                     |  |                            |  |                            |  |
| Empty Kit Relinquished by:   |  | Date:  |  | Time:   |  | Method of Shipment:  |  |                                     |  |                            |  |                            |  |
| Relinquished by: <u>[Signature]</u>  |  | Date/Time: <u>5/25/22 13:30</u>  |  | Company: <u>EPINS SHA</u>                                   |  | Received by: <u>[Signature]</u>  |  | Date/Time: <u>5/31/22</u>           |  | Company: <u>SHA</u>        |  |                            |  |
| Relinquished by: <u>[Signature]</u>  |  | Date/Time: <u>6/1/22 16:50</u>   |  | Company: <u>SHA</u>   |  | Received by: _____   |  | Date/Time: _____                    |  | Company: _____             |  |                            |  |
| Relinquished by: _____   |  | Date/Time: _____   |  | Company: _____  |  | Received by: <u>[Signature]</u>  |  | Date/Time: <u>6-2-22 10:23</u>      |  | Company: <u>ELLET</u>      |  |                            |  |
| Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No   |  | Custody Seal No.: <u>141112</u>  |  | Cooler Temperature(s) °C and Other Remarks: <u>3.5</u>      |  |  |  |                                     |  |                            |  |                            |  |



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-85998-5

Login Number: 85998

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: McCaskey, Jonathan

| Question  | Answer | Comment |
|---|--------|---------|
| The cooler's custody seal is intact.  | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.    | True   |         |
| Samples were received on ice.   | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).        | True   |         |
| Cooler Temperature is recorded.   | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen). | N/A    |         |
| WV: Container Temperature is recorded.  | N/A    |         |
| COC is present.   | True   |         |
| COC is filled out in ink and legible.   | True   |         |
| COC is filled out with all pertinent information.                                 | True   |         |
| There are no discrepancies between the containers received and the COC.           | True   |         |
| Sample containers have legible labels.  | True   |         |
| Containers are not broken or leaking.   | True   |         |
| Sample collection date/times are provided.  | True   |         |
| Appropriate sample containers are used.   | True   |         |
| Sample bottles are completely filled.   | True   |         |
| There is sufficient vol. for all requested analyses.                              | True   |         |
| Is the Field Sampler's name present on COC?                                       | True   |         |
| Sample custody seals are intact.  | N/A    |         |

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-103007-1

Client Project/Site: N Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



*Authorized for release by:*

11/9/2022 12:09:19 AM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.





Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer".

---

Kelly Bauer  
Project Manager  
11/9/2022 12:09:19 AM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 10 |
| Lab Chronicle . . . . .            | 11 |
| Certification Summary . . . . .    | 12 |
| Method Summary . . . . .           | 13 |
| Sample Summary . . . . .           | 14 |
| Chain of Custody . . . . .         | 15 |
| Receipt Checklists . . . . .       | 16 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103007-1

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103007-1

---

## Job ID: 410-103007-1

---

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

### Narrative

---

Job Narrative  
410-103007-1

### Receipt

The sample was received on 10/22/2022 9:50 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.1°C

### PFAS

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103007-1

**Client Sample ID: 40-27\_20221021**

**Lab Sample ID: 410-103007-1**

No Detections.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103007-1

**Client Sample ID: 40-27\_20221021**

**Lab Sample ID: 410-103007-1**

Date Collected: 10/21/22 10:45

Matrix: Water

Date Received: 10/22/22 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 1.6 | 0.41 | ng/L |   | 11/03/22 17:24 | 11/08/22 05:27 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 1.6 | 0.41 | ng/L |   | 11/03/22 17:24 | 11/08/22 05:27 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 1.6 | 0.41 | ng/L |   | 11/03/22 17:24 | 11/08/22 05:27 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 1.6 | 0.41 | ng/L |   | 11/03/22 17:24 | 11/08/22 05:27 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 1.6 | 0.82 | ng/L |   | 11/03/22 17:24 | 11/08/22 05:27 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.6 | 0.41 | ng/L |   | 11/03/22 17:24 | 11/08/22 05:27 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 95        |           | 31 - 182 | 11/03/22 17:24 | 11/08/22 05:27 | 1       |
| 13C8 PFOA        | 97        |           | 48 - 162 | 11/03/22 17:24 | 11/08/22 05:27 | 1       |
| 13C9 PFNA        | 92        |           | 51 - 167 | 11/03/22 17:24 | 11/08/22 05:27 | 1       |
| 13C3 PFHxS       | 99        |           | 28 - 188 | 11/03/22 17:24 | 11/08/22 05:27 | 1       |
| 13C8 PFOS        | 98        |           | 51 - 159 | 11/03/22 17:24 | 11/08/22 05:27 | 1       |
| 13C6 PFDA        | 90        |           | 49 - 163 | 11/03/22 17:24 | 11/08/22 05:27 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103007-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID   | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|--------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                    | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-103007-1       | 40-27_20221021     | 95  | 97                 | 92                 | 99                 | 98                 | 90                 |
| LCS 410-313710/2-A | Lab Control Sample | 90  | 90                 | 93                 | 92                 | 96                 | 90                 |
| MB 410-313710/1-A  | Method Blank       | 91  | 93                 | 96                 | 95                 | 99                 | 91                 |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA





# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103007-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-313710/1-A**

**Matrix: Water**

**Analysis Batch: 314977**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 313710**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 1.0  | ng/L |   | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 11/03/22 17:24 | 11/08/22 01:30 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 91        |           | 31 - 182 | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| 13C8 PFOA        | 93        |           | 48 - 162 | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| 13C9 PFNA        | 96        |           | 51 - 167 | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| 13C3 PFHxS       | 95        |           | 28 - 188 | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| 13C8 PFOS        | 99        |           | 51 - 159 | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| 13C6 PFDA        | 91        |           | 49 - 163 | 11/03/22 17:24 | 11/08/22 01:30 | 1       |

**Lab Sample ID: LCS 410-313710/2-A**

**Matrix: Water**

**Analysis Batch: 314977**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 313710**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 25.1       |               | ng/L |   | 98   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 26.3       |               | ng/L |   | 103  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 24.1       |               | ng/L |   | 103  | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 24.9       |               | ng/L |   | 105  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 26.5       |               | ng/L |   | 104  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 90        |           | 31 - 182 |
| 13C8 PFOA        | 90        |           | 48 - 162 |
| 13C9 PFNA        | 93        |           | 51 - 167 |
| 13C3 PFHxS       | 92        |           | 28 - 188 |
| 13C8 PFOS        | 96        |           | 51 - 159 |
| 13C6 PFDA        | 90        |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103007-1

## LCMS

### Prep Batch: 313710

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-103007-1       | 40-27_20221021     | Total/NA  | Water  | 537 IDA |            |
| MB 410-313710/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-313710/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 314977

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-103007-1       | 40-27_20221021     | Total/NA  | Water  | 537 IDA | 313710     |
| MB 410-313710/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 313710     |
| LCS 410-313710/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 313710     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103007-1

**Client Sample ID: 40-27\_20221021**

**Lab Sample ID: 410-103007-1**

**Date Collected: 10/21/22 10:45**

**Matrix: Water**

**Date Received: 10/22/22 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 313710       | K9VR          | ELLE | 11/03/22 17:24       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 314977       | PY4D          | ELLE | 11/08/22 05:27       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103007-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103007-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103007-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-103007-1  | 40-27_20221021   | Water  | 10/21/22 10:45 | 10/22/22 09:50 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

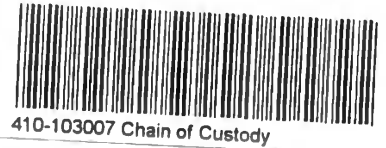
# Environmental Analysis Request/Chain of Custody



Lancaster Laboratories Environmental

Acct # \_\_\_\_\_ Group # \_\_\_\_\_ Sample # \_\_\_\_\_

| Client: Sanborn Head & Associates  |                                    |                |  | Matrix  |       |                          | Analyses Requested                |   |   |              |  |  |  |      |  |      |  |      | For Lab Use Only      |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
|--|------------------------------------|----------------|--|---|-------|--------------------------|-----------------------------------|---|---|--------------|--|--|--|------|--|------|--|------|-----------------------|--------------------|---------|------|------|-----------|-----------------|--|--|----------------------|----------|--|--|------------------------------------|------------------------------------|--|--|--------------------|-----------|--|--|
| Project Name/#: N. Monmouth PFAS 5197.01   |                                    | Site ID #:     |  | <input type="checkbox"/> Tissue<br><input checked="" type="checkbox"/> Ground<br><input type="checkbox"/> Surface<br><br><input type="checkbox"/> Potable<br><input type="checkbox"/> NPDES<br><input type="checkbox"/> Field Blank<br><br><input type="checkbox"/> Soil<br><input type="checkbox"/> Water<br><input type="checkbox"/> Other: |       |                          | Preservation and Filtration Codes |   |   |              |  |  |  |      |  |      |  |      | SF #: _____           |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Project Manager: Andrew Buchy  |                                    | P.O #: 5197.01 |  |   |       |                          |                                   |   |   |              |  |  |  |      |  |      |  |      | SCR #: _____          |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Sampler: Don Kelsey  |                                    | PWSID #:       |  |   |       |                          |                                   |   |   |              |  |  |  |      |  |      |  |      | Total # of Containers |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Phone #: 603-229-1900  |                                    | Quote #:       |  |   |       |                          |                                   |   |   |              |  |  |  |      |  |      |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| State where samples were collected: ME   |                                    |                |  | For Compliance Yes <input type="checkbox"/> No <input type="checkbox"/>   |       |                          |                                   | <table border="1" style="width: 100%;"> <tr> <td colspan="4" style="text-align: center;">Preservation Codes</td> </tr> <tr> <td>H = HCl</td> <td colspan="3">T = Thiosulfate</td> </tr> <tr> <td>N = HNO<sub>3</sub></td> <td colspan="3">B = NaOH</td> </tr> <tr> <td>S = H<sub>2</sub>SO<sub>4</sub></td> <td colspan="3">P = H<sub>3</sub>PO<sub>4</sub></td> </tr> <tr> <td>F = Field Filtered</td> <td colspan="3">O = Other</td> </tr> </table> |   |              |  |  |  |      |  |      |  |      |                       | Preservation Codes |         |      |      | H = HCl   | T = Thiosulfate |  |  | N = HNO <sub>3</sub> | B = NaOH |  |  | S = H <sub>2</sub> SO <sub>4</sub> | P = H <sub>3</sub> PO <sub>4</sub> |  |  | F = Field Filtered | O = Other |  |  |
| Preservation Codes   |                                    |                |  |   |       |                          |                                   |   |   |              |  |  |  |      |  |      |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| H = HCl  | T = Thiosulfate                    |                |  |   |       |                          |                                   |   |   |              |  |  |  |      |  |      |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| N = HNO <sub>3</sub>   | B = NaOH                           |                |  |   |       |                          |                                   |   |   |              |  |  |  |      |  |      |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| S = H <sub>2</sub> SO <sub>4</sub>   | P = H <sub>3</sub> PO <sub>4</sub> |                |  |   |       |                          |                                   |   |   |              |  |  |  |      |  |      |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| F = Field Filtered   | O = Other                          |                |  |   |       |                          |                                   |   |   |              |  |  |  |      |  |      |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Collection   |                                    |                |  | Soil  | Water | Other:                   | Total # of Containers             | PFAS 537 Mod with isotope dilution (6 compounds)  |   |              |  |  |  |      |  |      |  |      |                       |                    | Remarks |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
|  |                                    |                |  |   |       |                          |                                   |   |   |              |  |  |  |      |  |      |  |      |                       |                    | Date    | Time | Grab | Composite |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Sample Identification  |                                    |                |  |   |       |                          |                                   |   |   |              |  |  |  |      |  |      |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| 40-27_20221021   |                                    |                |  | 10/21/2022  | 10:45 | X                        |                                   | 2   | X |              |  |  |  |      |  |      |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| <b>Turnaround Time Requested (TAT)</b> (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/><br>(Rush TAT is subject to laboratory approval and surcharges) |                                    |                |  | Relinquished by:  |       | Date                     |                                   | Time  |   | Received by: |  |  |  | Date |  | Time |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
|  |                                    |                |  |   |       | 10/21/22                 |                                   | 13:00   |   |              |  |  |  | Date |  | Time |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
|  |                                    |                |  |   |       | Date results are needed: |                                   | Relinquished by:  |   |              |  |  |  | Date |  | Time |  | Date |                       | Time               |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Rush results requested by (please check): E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>   |                                    |                |  | Relinquished by:  |       | Date                     |                                   | Time  |   | Received by: |  |  |  | Date |  | Time |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| E-mail Address   |                                    |                |  | Relinquished by:  |       | Date                     |                                   | Time  |   | Received by: |  |  |  | Date |  | Time |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Phone  |                                    |                |  | Relinquished by:  |       | Date                     |                                   | Time  |   | Received by: |  |  |  | Date |  | Time |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| <b>Data Package Options</b> (please check if required)   |                                    |                |  | Relinquished by:  |       | Date                     |                                   | Time  |   | Received by: |  |  |  | Date |  | Time |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Level I <input type="checkbox"/> MA MCP <input type="checkbox"/>   |                                    |                |  | Relinquished by:  |       | Date                     |                                   | Time  |   | Received by: |  |  |  | Date |  | Time |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Level II <input checked="" type="checkbox"/> CT RCP <input type="checkbox"/>   |                                    |                |  | Relinquished by:  |       | Date                     |                                   | Time  |   | Received by: |  |  |  | Date |  | Time |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Level VI <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/>  |                                    |                |  | Relinquished by:  |       | Date                     |                                   | Time  |   | Received by: |  |  |  | Date |  | Time |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| NJ DKQP <input type="checkbox"/> NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B  |                                    |                |  | Relinquished by Commercial Carrier:   |       |                          |                                   | Temperature upon receipt 3.1 °C   |   |              |  |  |  |      |  |      |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| EQUS 4-file format/SHA   |                                    |                |  | UPS _____ FedEx <input checked="" type="checkbox"/> Other _____   |       |                          |                                   |   |   |              |  |  |  |      |  |      |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, format: Standard (flat file)   |                                    |                |  |   |       |                          |                                   |   |   |              |  |  |  |      |  |      |  |      |                       |                    |         |      |      |           |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |



MMW



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-103007-1

Login Number: 103007

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Burkholder, Conrad

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-95923-1

Client Project/Site: N. Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



*Authorized for release by:*  
9/12/2022 8:33:04 AM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer".

---

Kelly Bauer  
Project Manager  
9/12/2022 8:33:04 AM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 10 |
| Lab Chronicle . . . . .            | 11 |
| Certification Summary . . . . .    | 12 |
| Method Summary . . . . .           | 13 |
| Sample Summary . . . . .           | 14 |
| Chain of Custody . . . . .         | 15 |
| Receipt Checklists . . . . .       | 16 |

# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95923-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description                                     |
|-----------|---|
| I         | Value is EMPC (estimated maximum possible concentration). |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95923-1

---

**Job ID: 410-95923-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative**  
**410-95923-1**

**Receipt**

The sample was received on 8/26/2022 10:28 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95923-1

Client Sample ID: 40-28\_20220824

Lab Sample ID: 410-95923-1

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil | Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|-----|-----|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 6.7    |           | 1.7 | 0.42 | ng/L | 1   |     |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 35     |           | 1.7 | 0.42 | ng/L | 1   |     |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 3.3    |           | 1.7 | 0.42 | ng/L | 1   |     |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 12     | I         | 1.7 | 0.42 | ng/L | 1   |     |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95923-1

**Client Sample ID: 40-28\_20220824**

**Lab Sample ID: 410-95923-1**

Date Collected: 08/24/22 10:18

Matrix: Water

Date Received: 08/26/22 10:28

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 6.7    |           | 1.7 | 0.42 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:09 | 1       |
| Perfluorooctanoic acid (PFOA)        | 35     |           | 1.7 | 0.42 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:09 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 1.7 | 0.42 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:09 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 3.3    |           | 1.7 | 0.42 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:09 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 12     | I         | 1.7 | 0.42 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:09 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.7 | 0.42 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:09 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 105       |           | 31 - 182 | 09/06/22 09:44 | 09/09/22 18:09 | 1       |
| 13C8 PFOA        | 100       |           | 48 - 162 | 09/06/22 09:44 | 09/09/22 18:09 | 1       |
| 13C9 PFNA        | 99        |           | 51 - 167 | 09/06/22 09:44 | 09/09/22 18:09 | 1       |
| 13C3 PFHxS       | 113       |           | 28 - 188 | 09/06/22 09:44 | 09/09/22 18:09 | 1       |
| 13C8 PFOS        | 105       |           | 51 - 159 | 09/06/22 09:44 | 09/09/22 18:09 | 1       |
| 13C6 PFDA        | 98        |           | 49 - 163 | 09/06/22 09:44 | 09/09/22 18:09 | 1       |



# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95923-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID   | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|--------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                    | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-95923-1        | 40-28_20220824     | 105   | 100                | 99                 | 113                | 105                | 98                 |
| LCS 410-292937/2-A | Lab Control Sample | 96  | 96                 | 100                | 110                | 100                | 100                |
| MB 410-292937/1-A  | Method Blank       | 96  | 92                 | 97                 | 100                | 99                 | 98                 |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95923-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-292937/1-A**

**Matrix: Water**

**Analysis Batch: 294182**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 292937**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 96        |           | 31 - 182 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C8 PFOA        | 92        |           | 48 - 162 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C9 PFNA        | 97        |           | 51 - 167 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C3 PFHxS       | 100       |           | 28 - 188 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C8 PFOS        | 99        |           | 51 - 159 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C6 PFDA        | 98        |           | 49 - 163 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |

**Lab Sample ID: LCS 410-292937/2-A**

**Matrix: Water**

**Analysis Batch: 294182**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 292937**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 24.9       |               | ng/L |   | 97   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 27.0       |               | ng/L |   | 106  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 21.6       |               | ng/L |   | 93   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.4       |               | ng/L |   | 99   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 26.6       |               | ng/L |   | 104  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 96        |           | 31 - 182 |
| 13C8 PFOA        | 96        |           | 48 - 162 |
| 13C9 PFNA        | 100       |           | 51 - 167 |
| 13C3 PFHxS       | 110       |           | 28 - 188 |
| 13C8 PFOS        | 100       |           | 51 - 159 |
| 13C6 PFDA        | 100       |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95923-1

## LCMS

### Prep Batch: 292937

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95923-1        | 40-28_20220824     | Total/NA  | Water  | 537 IDA |            |
| MB 410-292937/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-292937/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 294182

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95923-1        | 40-28_20220824     | Total/NA  | Water  | 537 IDA | 292937     |
| MB 410-292937/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 292937     |
| LCS 410-292937/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 292937     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95923-1

**Client Sample ID: 40-28\_20220824**

**Lab Sample ID: 410-95923-1**

**Date Collected: 08/24/22 10:18**

**Matrix: Water**

**Date Received: 08/26/22 10:28**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 292937       | D5VP          | ELLE | 09/06/22 09:44       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 294182       | ZG8V          | ELLE | 09/09/22 18:09       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95923-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95923-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95923-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-95923-1   | 40-28_20220824   | Water  | 08/24/22 10:18 | 08/26/22 10:28 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



Lancaster Laboratories Environmental

Enviro



410-95923 Chain of Custody

request/Chain of Custody

Sample #

| Client: <b>Sanborn Head &amp; Associates</b>   |  |  |           | <b>Matrix</b>  |      |   |      | <b>Analyses Requested</b>                  |        |  |  |                      |  |          |      |  |  | <b>For Lab Use Only</b> |  |                    |         |                 |
|--|--|--|-----------|--|------|---|------|--|--------|--|--|----------------------|--|----------|------|--|--|-------------------------|--|--------------------|---------|-----------------|
| Project Name#: <b>N. Monmouth PFAS 5197.01</b>   |  | Site ID #:   |           | <input type="checkbox"/> Tissue  |      | <input type="checkbox"/> Ground           |      | <input type="checkbox"/> Surface           |        | <b>Preservation and Filtration Codes</b>         |  |                      |  |          |      |  |  |                         |  | SF #: _____        |         |                 |
| Project Manager: <b>Andrew Buchy</b>   |  | P.O. #: <b>5197.01</b>   |           | <input type="checkbox"/> Polable   |      | <input checked="" type="checkbox"/> NPDES |      | Field Blank                                |        |  |  |                      |  |          |      |  |  |                         |  | SCR #: _____       |         |                 |
| Sampler: <b>Don Kelsey</b>   |  | PWSID #:   |           | <input type="checkbox"/> Soil  |      | <input type="checkbox"/> Water            |      | Other:                                     |        | PFAS 537 Mod with isotope dilution (6 compounds) |  |                      |  |          |      |  |  |                         |  | Preservation Codes |         |                 |
| Phone #: <b>603-229-1900</b>   |  | Quote #:   |           | <input type="checkbox"/> Sediment  |      | <input type="checkbox"/> Composite        |      | Total # of Containers                      |        |  |  |                      |  |          |      |  |  |                         |  | H = HCl            |         | T = Thiosulfate |
| State where samples were collected: <b>ME</b>  |  |  |           | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/> |      |   |      |  |        |  |  | N = HNO <sub>3</sub> |  | B = NaOH |      |  |  |                         |  |                    |         |                 |
| Sample Identification  |  |  | Date      | Time   | Grab | Composite                                 | Soil | Water                                      | Other: | Total # of Containers                            | PFAS 537 Mod with isotope dilution (6 compounds) |                      |  |          |      |  |  |                         |  |                    | Remarks |                 |
| 40-28_20220824   |  |  | 8/24/2022 | 10:28  | X    |   |      | X  |        | 2  | X  |                      |  |          |      |  |  |                         |  |                    |         |                 |
| Turnaround Time Requested (TAT) (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |  |  |           | Relinquished by:   |      |   |      | Date                                       | Time   | Received by:                                     |  |                      |  | Date     | Time |  |  |                         |  |                    |         |                 |
| (Rush TAT is subject to laboratory approval and surcharges.)   |  |  |           | <i>[Signature]</i>   |      |   |      | 8/25/22                                    | 13:30  |  |  |                      |  |          |      |  |  |                         |  |                    |         |                 |
| Date results are needed:   |  |  |           | Relinquished by:   |      |   |      | Date                                       | Time   | Received by:                                     |  |                      |  | Date     | Time |  |  |                         |  |                    |         |                 |
| Rush results requested by (please check): E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>                   |  |  |           | <del>Relinquished by:</del>  |      |   |      | <del>Date Time Received by Date Time</del> |        |  |  | <del>Date Time</del> |  |          |      |  |  |                         |  |                    |         |                 |
| E-mail Address:  |  |  |           | Relinquished by:   |      |   |      | Date                                       | Time   | Received by:                                     |  |                      |  | Date     | Time |  |  |                         |  |                    |         |                 |
| Phone:   |  |  |           | Relinquished by:   |      |   |      | Date                                       | Time   | Received by:                                     |  |                      |  | Date     | Time |  |  |                         |  |                    |         |                 |
| <b>Data Package Options</b> (please check if required)   |  |  |           | Relinquished by:   |      |   |      | Date                                       | Time   | Received by:                                     |  |                      |  | Date     | Time |  |  |                         |  |                    |         |                 |
| Level I <input type="checkbox"/>   |  | MA MCP <input type="checkbox"/>  |           | Relinquished by:   |      |   |      | Date                                       | Time   | Received by:                                     |  |                      |  | Date     | Time |  |  |                         |  |                    |         |                 |
| Level II <input checked="" type="checkbox"/>   |  | CT RCP <input type="checkbox"/>  |           | <del>Relinquished by:</del>  |      |   |      | <del>Date Time Received by Date Time</del> |        |  |  | Date Time            |  |          |      |  |  |                         |  |                    |         |                 |
| Level VI <input type="checkbox"/>  |  | TX TRRP-13 <input type="checkbox"/>                                      |           |  |      |   |      |  |        |  |  | 8/25/22 10:28        |  |          |      |  |  |                         |  |                    |         |                 |
| NJ DKQP <input type="checkbox"/>   |  | NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B |           | Relinquished by Commercial Carrier:                                      |      |   |      | Temperature upon receipt                   |        |  |  | 2.0 °C               |  |          |      |  |  |                         |  |                    |         |                 |
| EQUS 4-file format/SHA   |  |  |           | UPS _____ FedEx _____ Other _____  |      |   |      |  |        |  |  |                      |  |          |      |  |  |                         |  |                    |         |                 |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |  |  |           | If yes, format: Standard (flat file)                                     |      |   |      |  |        |  |  |                      |  |          |      |  |  |                         |  |                    |         |                 |

10,

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-95923-1

**Login Number: 95923**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: Renner, Melissa**

| Question   | Answer | Comment      |
|--|--------|--------------|
| The cooler's custody seal is intact.   | True   |              |
| The cooler or samples do not appear to have been compromised or tampered with.             | True   |              |
| Samples were received on ice.  | True   |              |
| Cooler Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen).        | True   |              |
| Cooler Temperature is recorded.  | True   |              |
| WV: Container Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen). | N/A    |              |
| WV: Container Temperature is recorded.   | N/A    |              |
| COC is present.  | True   |              |
| COC is filled out in ink and legible.  | True   |              |
| COC is filled out with all pertinent information.  | True   |              |
| There are no discrepancies between the containers received and the COC.                    | True   |              |
| Sample containers have legible labels.   | True   |              |
| Containers are not broken or leaking.  | True   |              |
| Sample collection date/times are provided.   | True   |              |
| Appropriate sample containers are used.  | True   |              |
| Sample bottles are completely filled.  | True   |              |
| There is sufficient vol. for all requested analyses.                                       | True   |              |
| Is the Field Sampler's name present on COC?  | True   |              |
| Sample custody seals are intact.   | N/A    | Not present. |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?                | N/A    |              |

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-95925-1

Client Project/Site: N. Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



*Authorized for release by:*  
9/13/2022 8:07:45 PM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer". The signature is written in a cursive, flowing style.

---

Kelly Bauer  
Project Manager  
9/13/2022 8:07:45 PM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 11 |
| Lab Chronicle . . . . .            | 12 |
| Certification Summary . . . . .    | 13 |
| Method Summary . . . . .           | 14 |
| Sample Summary . . . . .           | 15 |
| Chain of Custody . . . . .         | 16 |
| Receipt Checklists . . . . .       | 17 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95925-1

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95925-1

---

## Job ID: 410-95925-1

---

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

### Narrative

---

Job Narrative  
410-95925-1

### Receipt

The samples were received on 8/26/2022 10:28 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C

### PFAS

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95925-1

**Client Sample ID: 40-30\_20220824**

**Lab Sample ID: 410-95925-1**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 4.4    |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 27     |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 1.9    |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 8.4    |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |

**Client Sample ID: FB-01\_20220824**

**Lab Sample ID: 410-95925-2**

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC



# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95925-1

**Client Sample ID: 40-30\_20220824**

**Lab Sample ID: 410-95925-1**

Date Collected: 08/24/22 09:20

Matrix: Water

Date Received: 08/26/22 10:28

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 4.4       |           | 1.7      | 0.42 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:32 | 1       |
| Perfluorooctanoic acid (PFOA)        | 27        |           | 1.7      | 0.42 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:32 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.7      | 0.42 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:32 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 1.9       |           | 1.7      | 0.42 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:32 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 8.4       |           | 1.7      | 0.42 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:32 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.7      | 0.42 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:32 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 94        |           | 31 - 182 |      |      |   | 09/06/22 09:44 | 09/09/22 18:32 | 1       |
| 13C8 PFOA                            | 92        |           | 48 - 162 |      |      |   | 09/06/22 09:44 | 09/09/22 18:32 | 1       |
| 13C9 PFNA                            | 98        |           | 51 - 167 |      |      |   | 09/06/22 09:44 | 09/09/22 18:32 | 1       |
| 13C3 PFHxS                           | 104       |           | 28 - 188 |      |      |   | 09/06/22 09:44 | 09/09/22 18:32 | 1       |
| 13C8 PFOS                            | 104       |           | 51 - 159 |      |      |   | 09/06/22 09:44 | 09/09/22 18:32 | 1       |
| 13C6 PFDA                            | 100       |           | 49 - 163 |      |      |   | 09/06/22 09:44 | 09/09/22 18:32 | 1       |

**Client Sample ID: FB-01\_20220824**

**Lab Sample ID: 410-95925-2**

Date Collected: 08/24/22 09:15

Matrix: Water

Date Received: 08/26/22 10:28

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND        |           | 1.8      | 0.46 | ng/L |   | 09/07/22 16:51 | 09/09/22 14:59 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND        |           | 1.8      | 0.46 | ng/L |   | 09/07/22 16:51 | 09/09/22 14:59 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.8      | 0.46 | ng/L |   | 09/07/22 16:51 | 09/09/22 14:59 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |           | 1.8      | 0.46 | ng/L |   | 09/07/22 16:51 | 09/09/22 14:59 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND        |           | 1.8      | 0.46 | ng/L |   | 09/07/22 16:51 | 09/09/22 14:59 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.8      | 0.46 | ng/L |   | 09/07/22 16:51 | 09/09/22 14:59 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 90        |           | 31 - 182 |      |      |   | 09/07/22 16:51 | 09/09/22 14:59 | 1       |
| 13C8 PFOA                            | 92        |           | 48 - 162 |      |      |   | 09/07/22 16:51 | 09/09/22 14:59 | 1       |
| 13C9 PFNA                            | 92        |           | 51 - 167 |      |      |   | 09/07/22 16:51 | 09/09/22 14:59 | 1       |
| 13C3 PFHxS                           | 92        |           | 28 - 188 |      |      |   | 09/07/22 16:51 | 09/09/22 14:59 | 1       |
| 13C8 PFOS                            | 94        |           | 51 - 159 |      |      |   | 09/07/22 16:51 | 09/09/22 14:59 | 1       |
| 13C6 PFDA                            | 92        |           | 49 - 163 |      |      |   | 09/07/22 16:51 | 09/09/22 14:59 | 1       |



# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95925-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID   | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|--------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                    | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-95925-1        | 40-30_20220824     | 94  | 92                 | 98                 | 104                | 104                | 100                |
| 410-95925-2        | FB-01_20220824     | 90  | 92                 | 92                 | 92                 | 94                 | 92                 |
| LCS 410-292937/2-A | Lab Control Sample | 96  | 96                 | 100                | 110                | 100                | 100                |
| LCS 410-293576/2-A | Lab Control Sample | 92  | 91                 | 91                 | 97                 | 96                 | 85                 |
| MB 410-292937/1-A  | Method Blank       | 96  | 92                 | 97                 | 100                | 99                 | 98                 |
| MB 410-293576/1-A  | Method Blank       | 85  | 87                 | 87                 | 87                 | 91                 | 85                 |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95925-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-292937/1-A**  
**Matrix: Water**  
**Analysis Batch: 294182**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 292937**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 96        |           | 31 - 182 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C8 PFOA        | 92        |           | 48 - 162 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C9 PFNA        | 97        |           | 51 - 167 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C3 PFHxS       | 100       |           | 28 - 188 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C8 PFOS        | 99        |           | 51 - 159 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C6 PFDA        | 98        |           | 49 - 163 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |

**Lab Sample ID: LCS 410-292937/2-A**  
**Matrix: Water**  
**Analysis Batch: 294182**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 292937**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 24.9       |               | ng/L |   | 97   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 27.0       |               | ng/L |   | 106  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 21.6       |               | ng/L |   | 93   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.4       |               | ng/L |   | 99   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 26.6       |               | ng/L |   | 104  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 96        |           | 31 - 182 |
| 13C8 PFOA        | 96        |           | 48 - 162 |
| 13C9 PFNA        | 100       |           | 51 - 167 |
| 13C3 PFHxS       | 110       |           | 28 - 188 |
| 13C8 PFOS        | 100       |           | 51 - 159 |
| 13C6 PFDA        | 100       |           | 49 - 163 |

**Lab Sample ID: MB 410-293576/1-A**  
**Matrix: Water**  
**Analysis Batch: 294280**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 293576**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 09/07/22 16:51 | 09/09/22 14:26 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/07/22 16:51 | 09/09/22 14:26 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/07/22 16:51 | 09/09/22 14:26 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 09/07/22 16:51 | 09/09/22 14:26 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 0.50 | ng/L |   | 09/07/22 16:51 | 09/09/22 14:26 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/07/22 16:51 | 09/09/22 14:26 | 1       |

# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95925-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| Isotope Dilution | MB MB     |           | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 85        |           | 31 - 182 | 09/07/22 16:51 | 09/09/22 14:26 | 1       |
| 13C8 PFOA        | 87        |           | 48 - 162 | 09/07/22 16:51 | 09/09/22 14:26 | 1       |
| 13C9 PFNA        | 87        |           | 51 - 167 | 09/07/22 16:51 | 09/09/22 14:26 | 1       |
| 13C3 PFHxS       | 87        |           | 28 - 188 | 09/07/22 16:51 | 09/09/22 14:26 | 1       |
| 13C8 PFOS        | 91        |           | 51 - 159 | 09/07/22 16:51 | 09/09/22 14:26 | 1       |
| 13C6 PFDA        | 85        |           | 49 - 163 | 09/07/22 16:51 | 09/09/22 14:26 | 1       |

Lab Sample ID: LCS 410-293576/2-A

Matrix: Water

Analysis Batch: 294280

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 293576

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 28.5       |               | ng/L |   | 111  | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 27.7       |               | ng/L |   | 108  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 25.4       |               | ng/L |   | 109  | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.3       |               | ng/L |   | 99   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 29.4       |               | ng/L |   | 115  | 56 - 138    |

| Isotope Dilution | LCS LCS   |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 92        |           | 31 - 182 |
| 13C8 PFOA        | 91        |           | 48 - 162 |
| 13C9 PFNA        | 91        |           | 51 - 167 |
| 13C3 PFHxS       | 97        |           | 28 - 188 |
| 13C8 PFOS        | 96        |           | 51 - 159 |
| 13C6 PFDA        | 85        |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95925-1

## LCMS

### Prep Batch: 292937

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95925-1        | 40-30_20220824     | Total/NA  | Water  | 537 IDA |            |
| MB 410-292937/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-292937/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Prep Batch: 293576

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95925-2        | FB-01_20220824     | Total/NA  | Water  | 537 IDA |            |
| MB 410-293576/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-293576/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 294182

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95925-1        | 40-30_20220824     | Total/NA  | Water  | 537 IDA | 292937     |
| MB 410-292937/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 292937     |
| LCS 410-292937/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 292937     |

### Analysis Batch: 294280

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95925-2        | FB-01_20220824     | Total/NA  | Water  | 537 IDA | 293576     |
| MB 410-293576/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 293576     |
| LCS 410-293576/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 293576     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95925-1

**Client Sample ID: 40-30\_20220824**

**Lab Sample ID: 410-95925-1**

Date Collected: 08/24/22 09:20

Matrix: Water

Date Received: 08/26/22 10:28

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 292937       | D5VP          | ELLE | 09/06/22 09:44       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 294182       | ZG8V          | ELLE | 09/09/22 18:32       |

**Client Sample ID: FB-01\_20220824**

**Lab Sample ID: 410-95925-2**

Date Collected: 08/24/22 09:15

Matrix: Water

Date Received: 08/26/22 10:28

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 293576       | K9VR          | ELLE | 09/07/22 16:51       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 294280       | JVK6          | ELLE | 09/09/22 14:59       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95925-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95925-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95925-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-95925-1   | 40-30_20220824   | Water  | 08/24/22 09:20 | 08/26/22 10:28 |
| 410-95925-2   | FB-01_20220824   | Water  | 08/24/22 09:15 | 08/26/22 10:28 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15





Lancaster Laboratories  
Environmental

Enviro



410-95925 Chain of Custody

Request/Chain of Custody

Sample # \_\_\_\_\_

|   |  |  |       |                                   |           |              |          |              |       |         |        |         |       |             |        |   |  |  |  |
|---|--|--|-------|-----------------------------------|-----------|--------------|----------|--------------|-------|---------|--------|---------|-------|-------------|--------|---|--|--|--|
| Client: <b>Sanborn Head &amp; Associates</b>  |  | Matrix   |       | Analyses Requested                |           |              |          |              |       |         |        |         |       |             |        | For Lab Use Only  |  |  |  |
| Project Name/#: N. Monmouth PFAS 5197.01  |  | Site ID #:   |       | Preservation and Filtration Codes |           |              |          |              |       |         |        |         |       |             |        | SF #: _____   |  |  |  |
| Project Manager: Andrew Buchy   |  | P.O. #: 5197.01  |       |                                   |           |              |          |              |       |         |        |         |       |             |        | SCR #: _____  |  |  |  |
| Sampler: Don Kelsey   |  | PWSID #:   |       |                                   |           |              |          |              |       |         |        |         |       |             |        | Preservation Codes  |  |  |  |
| Phone #: 603-229-1900   |  | Quote #:   |       |                                   |           |              |          |              |       |         |        |         |       |             |        | H = HCl      T = Thiosulfate  |  |  |  |
| State where samples were collected: ME  |  | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>   |       |                                   |           |              |          |              |       |         |        |         |       |             |        | N = HNO <sub>3</sub> B = NaOH   |  |  |  |
|   |  |  |       |                                   |           |              |          |              |       |         |        |         |       |             |        | S = H <sub>2</sub> SO <sub>4</sub> P = H <sub>3</sub> PO <sub>4</sub> |  |  |  |
|   |  |  |       |                                   |           |              |          |              |       |         |        |         |       |             |        | F = Field Filtered      O = Other                                     |  |  |  |
|   |  |  |       |                                   |           |              |          |              |       |         |        |         |       |             |        | Remarks   |  |  |  |
| Sample Identification   |  | Date   | Time  | Grab                              | Composite | Soil         | Sediment | Tissue       | Water | Potable | Ground | Surface | NPDES | Field Blank | Other: | Total # of Containers   | PFAS 537 Mod with isotope dilution (6 compounds) |  |  |
| 40-30_20220824  |  | 8/24/2022  | 09:20 | X                                 |           |              |          |              | X     |         |        |         |       |             |        | 42  | X  |  |  |
| FB-01_20220824  |  | 8/24/2022  | 09:15 | X                                 |           |              |          |              |       |         |        |         |       | X           |        | 2   | X  |  |  |
| Turnaround Time Requested (TAT) (please check):   |  | Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |       | Relinquished by:                  |           | Date         | Time     | Received by: |       | Date    | Time   |         |       |             |        |   |  |  |  |
| (Rush TAT is subject to laboratory approval and surcharges.)  |  |  |       | <i>[Signature]</i>                |           | 8/25/22      | 13:30    |              |       |         |        |         |       |             |        |   |  |  |  |
| Date results are needed:  |  | Relinquished by:   |       | Date                              | Time      | Received by: |          | Date         | Time  |         |        |         |       |             |        |   |  |  |  |
| Rush results requested by (please check):   |  | E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>             |       | Relinquished by:                  |           | Date         | Time     | Received by: |       | Date    | Time   |         |       |             |        |   |  |  |  |
| E-mail Address:   |  | Relinquished by:   |       | Date                              | Time      | Received by: |          | Date         | Time  |         |        |         |       |             |        |   |  |  |  |
| Phone:  |  | Relinquished by:   |       | Date                              | Time      | Received by: |          | Date         | Time  |         |        |         |       |             |        |   |  |  |  |
| Data Package Options (please check if required)   |  | Relinquished by:   |       | Date                              | Time      | Received by: |          | Date         | Time  |         |        |         |       |             |        |   |  |  |  |
| Level I <input type="checkbox"/> MA MCP <input type="checkbox"/>  |  | Relinquished by:   |       | Date                              | Time      | Received by: |          | Date         | Time  |         |        |         |       |             |        |   |  |  |  |
| Level II <input checked="" type="checkbox"/> CT RCP <input type="checkbox"/>                              |  | Relinquished by:   |       | Date                              | Time      | Received by: |          | Date         | Time  |         |        |         |       |             |        |   |  |  |  |
| Level VI <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/>                                     |  | Relinquished by:   |       | Date                              | Time      | Received by: |          | Date         | Time  |         |        |         |       |             |        |   |  |  |  |
| NJ DKQP <input type="checkbox"/> NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B |  | Relinquished by Commercial Carrier:  |       | Date                              |           | Time         |          | Received by: |       | Date    | Time   |         |       |             |        |   |  |  |  |
| EQUS 4-file format/SHA  |  | Temperature upon receipt   |       | 8/24/22                           |           | 10:28        |          |              |       |         |        |         |       |             |        |   |  |  |  |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                         |  | If yes, format: Standard (flat file)                                       |       | UPS                               |           | FedEx        |          | Other        |       |         |        |         |       |             |        |   |  |  |  |



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-95925-1

**Login Number: 95925**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: Renner, Melissa**

| Question   | Answer | Comment      |
|--|--------|--------------|
| The cooler's custody seal is intact.   | True   |              |
| The cooler or samples do not appear to have been compromised or tampered with.             | True   |              |
| Samples were received on ice.  | True   |              |
| Cooler Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen).        | True   |              |
| Cooler Temperature is recorded.  | True   |              |
| WV: Container Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen). | N/A    |              |
| WV: Container Temperature is recorded.   | N/A    |              |
| COC is present.  | True   |              |
| COC is filled out in ink and legible.  | True   |              |
| COC is filled out with all pertinent information.  | True   |              |
| There are no discrepancies between the containers received and the COC.                    | True   |              |
| Sample containers have legible labels.   | True   |              |
| Containers are not broken or leaking.  | True   |              |
| Sample collection date/times are provided.   | True   |              |
| Appropriate sample containers are used.  | True   |              |
| Sample bottles are completely filled.  | True   |              |
| There is sufficient vol. for all requested analyses.                                       | True   |              |
| Is the Field Sampler's name present on COC?  | True   |              |
| Sample custody seals are intact.   | N/A    | Not present. |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?                | True   |              |



 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 12/21/2022 9:37:28 PM

**JOB DESCRIPTION**

N Monmouth PFAS

**JOB NUMBER**

410-107673-1

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
12/21/2022 9:37:28 PM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 9  |
| QC Sample Results . . . . .        | 10 |
| QC Association Summary . . . . .   | 12 |
| Lab Chronicle . . . . .            | 13 |
| Certification Summary . . . . .    | 14 |
| Method Summary . . . . .           | 15 |
| Sample Summary . . . . .           | 16 |
| Chain of Custody . . . . .         | 17 |
| Receipt Checklists . . . . .       | 18 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107673-1

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107673-1

---

**Job ID: 410-107673-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

---

**Narrative**

**Job Narrative  
410-107673-1**

**Receipt**

The samples were received on 12/2/2022 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.9°C

**Receipt Exceptions**

One or more containers for the following sample was received empty: FB-01\_20221130 (410-107673-2). 1 plastic 250ml Unpreserved

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107673-1

---

**Client Sample ID: 40-32\_20221130**

**Lab Sample ID: 410-107673-1**

No Detections.

---

**Client Sample ID: FB-01\_20221130**

**Lab Sample ID: 410-107673-2**

No Detections.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-107673-1

**Client Sample ID: 40-32\_20221130**

**Lab Sample ID: 410-107673-1**

Date Collected: 11/30/22 10:30

Matrix: Water

Date Received: 12/02/22 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.8   |           | 1.8 |     | ng/L |   | 12/14/22 07:47 | 12/21/22 07:30 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.8   |           | 1.8 |     | ng/L |   | 12/14/22 07:47 | 12/21/22 07:30 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.8   |           | 1.8 |     | ng/L |   | 12/14/22 07:47 | 12/21/22 07:30 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.8   |           | 1.8 |     | ng/L |   | 12/14/22 07:47 | 12/21/22 07:30 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.8   |           | 1.8 |     | ng/L |   | 12/14/22 07:47 | 12/21/22 07:30 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.8   |           | 1.8 |     | ng/L |   | 12/14/22 07:47 | 12/21/22 07:30 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 104       |           | 31 - 182 | 12/14/22 07:47 | 12/21/22 07:30 | 1       |
| 13C8 PFOA        | 102       |           | 48 - 162 | 12/14/22 07:47 | 12/21/22 07:30 | 1       |
| 13C9 PFNA        | 109       |           | 51 - 167 | 12/14/22 07:47 | 12/21/22 07:30 | 1       |
| 13C3 PFHxS       | 111       |           | 28 - 188 | 12/14/22 07:47 | 12/21/22 07:30 | 1       |
| 13C8 PFOS        | 116       |           | 51 - 159 | 12/14/22 07:47 | 12/21/22 07:30 | 1       |
| 13C6 PFDA        | 98        |           | 49 - 163 | 12/14/22 07:47 | 12/21/22 07:30 | 1       |

**Client Sample ID: FB-01\_20221130**

**Lab Sample ID: 410-107673-2**

Date Collected: 11/30/22 10:15

Matrix: Water

Date Received: 12/02/22 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.8   |           | 1.8 |     | ng/L |   | 12/14/22 07:47 | 12/21/22 07:41 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.8   |           | 1.8 |     | ng/L |   | 12/14/22 07:47 | 12/21/22 07:41 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.8   |           | 1.8 |     | ng/L |   | 12/14/22 07:47 | 12/21/22 07:41 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.8   |           | 1.8 |     | ng/L |   | 12/14/22 07:47 | 12/21/22 07:41 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.8   |           | 1.8 |     | ng/L |   | 12/14/22 07:47 | 12/21/22 07:41 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.8   |           | 1.8 |     | ng/L |   | 12/14/22 07:47 | 12/21/22 07:41 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 94        |           | 31 - 182 | 12/14/22 07:47 | 12/21/22 07:41 | 1       |
| 13C8 PFOA        | 99        |           | 48 - 162 | 12/14/22 07:47 | 12/21/22 07:41 | 1       |
| 13C9 PFNA        | 101       |           | 51 - 167 | 12/14/22 07:47 | 12/21/22 07:41 | 1       |
| 13C3 PFHxS       | 105       |           | 28 - 188 | 12/14/22 07:47 | 12/21/22 07:41 | 1       |
| 13C8 PFOS        | 112       |           | 51 - 159 | 12/14/22 07:47 | 12/21/22 07:41 | 1       |
| 13C6 PFDA        | 102       |           | 49 - 163 | 12/14/22 07:47 | 12/21/22 07:41 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-107673-1

**Method: 537 IDA - EPA 537 Isotope Dilution**

**Matrix: Water**

**Prep Type: Total/NA**

| Lab Sample ID       | Client Sample ID       | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|---------------------|------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                     |                        | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-107673-1        | 40-32_20221130         | 104   | 102                | 109                | 111                | 116                | 98                 |
| 410-107673-2        | FB-01_20221130         | 94  | 99                 | 101                | 105                | 112                | 102                |
| LCS 410-326855/3-A  | Lab Control Sample     | 113   | 111                | 109                | 119                | 119                | 107                |
| LCSD 410-326855/4-A | Lab Control Sample Dup | 109   | 103                | 110                | 116                | 118                | 111                |
| MB 410-326855/1-A   | Method Blank           | 99  | 99                 | 111                | 102                | 114                | 102                |

**Surrogate Legend**

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107673-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-326855/1-A**  
**Matrix: Water**  
**Analysis Batch: 328943**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 326855**

| Analyte                              | MB     | MB        | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |     |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | <2.0   |           | 2.0 |     | ng/L |   | 12/14/22 07:47 | 12/21/22 04:22 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0   |           | 2.0 |     | ng/L |   | 12/14/22 07:47 | 12/21/22 04:22 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0   |           | 2.0 |     | ng/L |   | 12/14/22 07:47 | 12/21/22 04:22 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0   |           | 2.0 |     | ng/L |   | 12/14/22 07:47 | 12/21/22 04:22 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0   |           | 2.0 |     | ng/L |   | 12/14/22 07:47 | 12/21/22 04:22 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0   |           | 2.0 |     | ng/L |   | 12/14/22 07:47 | 12/21/22 04:22 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 99        |           | 31 - 182 | 12/14/22 07:47 | 12/21/22 04:22 | 1       |
| 13C8 PFOA        | 99        |           | 48 - 162 | 12/14/22 07:47 | 12/21/22 04:22 | 1       |
| 13C9 PFNA        | 111       |           | 51 - 167 | 12/14/22 07:47 | 12/21/22 04:22 | 1       |
| 13C3 PFHxS       | 102       |           | 28 - 188 | 12/14/22 07:47 | 12/21/22 04:22 | 1       |
| 13C8 PFOS        | 114       |           | 51 - 159 | 12/14/22 07:47 | 12/21/22 04:22 | 1       |
| 13C6 PFDA        | 102       |           | 49 - 163 | 12/14/22 07:47 | 12/21/22 04:22 | 1       |

**Lab Sample ID: LCS 410-326855/3-A**  
**Matrix: Water**  
**Analysis Batch: 328943**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 326855**

| Analyte                              | Spike Added | LCS    | LCS       | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|
|                                      |             | Result | Qualifier |      |   |      |             |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 19.6   |           | ng/L |   | 76   | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 19.1   |           | ng/L |   | 75   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 20.4   |           | ng/L |   | 80   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 17.4   |           | ng/L |   | 75   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 17.2   |           | ng/L |   | 72   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 22.1   |           | ng/L |   | 86   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 113       |           | 31 - 182 |
| 13C8 PFOA        | 111       |           | 48 - 162 |
| 13C9 PFNA        | 109       |           | 51 - 167 |
| 13C3 PFHxS       | 119       |           | 28 - 188 |
| 13C8 PFOS        | 119       |           | 51 - 159 |
| 13C6 PFDA        | 107       |           | 49 - 163 |

**Lab Sample ID: LCSD 410-326855/4-A**  
**Matrix: Water**  
**Analysis Batch: 328943**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 326855**

| Analyte                              | Spike Added | LCSD   | LCSD      | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|-----|-----------|
|                                      |             | Result | Qualifier |      |   |      |             |     |           |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 20.5   |           | ng/L |   | 80   | 59 - 145    | 5   | 30        |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 20.2   |           | ng/L |   | 79   | 51 - 145    | 6   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 21.2   |           | ng/L |   | 83   | 61 - 139    | 4   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 18.1   |           | ng/L |   | 77   | 58 - 134    | 4   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 18.8   |           | ng/L |   | 80   | 45 - 150    | 9   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 22.2   |           | ng/L |   | 87   | 56 - 138    | 1   | 30        |

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107673-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 109              |                  | 31 - 182      |
| 13C8 PFOA               | 103              |                  | 48 - 162      |
| 13C9 PFNA               | 110              |                  | 51 - 167      |
| 13C3 PFHxS              | 116              |                  | 28 - 188      |
| 13C8 PFOS               | 118              |                  | 51 - 159      |
| 13C6 PFDA               | 111              |                  | 49 - 163      |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107673-1

## LCMS

### Prep Batch: 326855

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-107673-1        | 40-32_20221130         | Total/NA  | Water  | 537 IDA |            |
| 410-107673-2        | FB-01_20221130         | Total/NA  | Water  | 537 IDA |            |
| MB 410-326855/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-326855/3-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-326855/4-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 328943

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-107673-1        | 40-32_20221130         | Total/NA  | Water  | 537 IDA | 326855     |
| 410-107673-2        | FB-01_20221130         | Total/NA  | Water  | 537 IDA | 326855     |
| MB 410-326855/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 326855     |
| LCS 410-326855/3-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 326855     |
| LCSD 410-326855/4-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 326855     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107673-1

**Client Sample ID: 40-32\_20221130**

**Lab Sample ID: 410-107673-1**

Date Collected: 11/30/22 10:30

Matrix: Water

Date Received: 12/02/22 09:50

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 326855       | M4QQ    | ELLE | 12/14/22 07:47       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 328943       | DTA4    | ELLE | 12/21/22 07:30       |

**Client Sample ID: FB-01\_20221130**

**Lab Sample ID: 410-107673-2**

Date Collected: 11/30/22 10:15

Matrix: Water

Date Received: 12/02/22 09:50

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 326855       | M4QQ    | ELLE | 12/14/22 07:47       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 328943       | DTA4    | ELLE | 12/21/22 07:41       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107673-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |



# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107673-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107673-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-107673-1  | 40-32_20221130   | Water  | 11/30/22 10:30 | 12/02/22 09:50 |
| 410-107673-2  | FB-01_20221130   | Water  | 11/30/22 10:15 | 12/02/22 09:50 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



410-107673 Chain of Custody

# Environmental Analysis Request/Chain of Custody

es

Acct. # \_\_\_\_\_ Group # \_\_\_\_\_ Sample # \_\_\_\_\_

|   |   |                             |                                      |  |           |   |       |                                      |  |  |      |  |  |                         |  |             |  |                              |  |
|---|---|-----------------------------|--------------------------------------|--|-----------|---|-------|--------------------------------------|--|--|------|--|--|-------------------------|--|-------------|--|------------------------------|--|
| Client: <b>Sanborn Head &amp; Associates</b>  |   |                             |                                      | <b>Matrix</b>  |           |   |       | <b>Analyses Requested</b>            |  |  |      |  |  | <b>For Lab Use Only</b> |  |             |  |                              |  |
| Project Name#: N. Monmouth PFAS 5197.01   |   | Site ID #:                  |                                      | <input type="checkbox"/> Tissue  |           | <input type="checkbox"/> Ground             |       | <input type="checkbox"/> Surface     |  | <b>Preservation and Filtration Codes</b> |      |  |  |                         |  | SF #: _____ |  |                              |  |
| Project Manager: Andrew Buchy   |   | P.O. #: 5197.01             |                                      | <input type="checkbox"/> Sediment  |           | <input checked="" type="checkbox"/> Potable |       | <input type="checkbox"/> NPDES       |  | <input type="checkbox"/> Field Blank     |      |  |  |                         |  |             |  | SCR #: _____                 |  |
| Sampler: Don Kelsey   |   | PWSID #:                    |                                      | <input type="checkbox"/> Soil  |           | <input type="checkbox"/> Water              |       | <input type="checkbox"/> Other:      |  | <b>Total # of Containers</b>             |      | PFAS 537 Mod with isotope dilution (6 compounds) |  |                         |  |             |  | <b>Preservation Codes</b>    |  |
| Phone #: 603-229-1900   |   | Quote #:                    |                                      | <input type="checkbox"/> Water   |           | <input type="checkbox"/> NPDES              |       | <input type="checkbox"/> Field Blank |  |  |      |  |  |                         |  |             |  | H = HCl      T = Thiosulfate |  |
| State where samples were collected: ME  |   |                             |                                      | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/> |           |   |       |                                      |  |  |      |  |  |                         |  |             |  |                              |  |
| <b>Collection</b>   |   |                             |                                      |  |           |   |       |                                      |  |  |      |  |  |                         |  |             |  |                              |  |
| <b>Sample Identification</b>  |   | Date                        | Time                                 | Grab   | Composite |   |       |                                      |  |  |      |  |  |                         |  |             |  | <b>Remarks</b>               |  |
| 40-32-20221130  |   | 11/20/22                    | 10:30                                | X  |           |   |       |                                      |  | 2  | X    |  |  |                         |  |             |  |                              |  |
| FB-DI-20221130  |   | 11/20/22                    | 10:15                                | X  |           |   |       |                                      |  | 2  | X    |  |  |                         |  |             |  |                              |  |
| <b>Turnaround Time Requested (TAT)</b> (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |   |                             |                                      | Relinquished by: <i>[Signature]</i>                                      |           | Date  | Time  | Received by:                         |  | Date                                     | Time |  |  |                         |  |             |  |                              |  |
| (Rush TAT is subject to laboratory approval and surcharges.)  |   |                             |                                      |  |           | 11/20/22                                    | 14:00 |                                      |  |  |      |  |  |                         |  |             |  |                              |  |
| Date results are needed:  |   |                             |                                      | Relinquished by:   |           | Date  | Time  | Received by:                         |  | Date                                     | Time |  |  |                         |  |             |  |                              |  |
| Rush results requested by (please check): E-Mail <input checked="" type="checkbox"/> Phone <input type="checkbox"/>               |   |                             |                                      | Relinquished by:   |           | Date  | Time  | Received by:                         |  | Date                                     | Time |  |  |                         |  |             |  |                              |  |
| E-mail Address: <i>A.BUCHY@SANBORNHEAD.COM</i>  |   |                             |                                      | Relinquished by:   |           | Date  | Time  | Received by:                         |  | Date                                     | Time |  |  |                         |  |             |  |                              |  |
| Phone: <i>610.984-1719</i>  |   |                             |                                      | Relinquished by:   |           | Date  | Time  | Received by:                         |  | Date                                     | Time |  |  |                         |  |             |  |                              |  |
| <b>Data Package Options</b> (please check if required)  |   |                             |                                      | Relinquished by:   |           | Date  | Time  | Received by:                         |  | Date                                     | Time |  |  |                         |  |             |  |                              |  |
| Level I   | <input type="checkbox"/>                | MA MCP                      | <input type="checkbox"/>             | Relinquished by:   |           | Date  | Time  | Received by:                         |  | Date                                     | Time |  |  |                         |  |             |  |                              |  |
| Level II  | <input checked="" type="checkbox"/>     | CT RCP                      | <input type="checkbox"/>             | Relinquished by:   |           | Date  | Time  | Received by:                         |  | Date                                     | Time |  |  |                         |  |             |  |                              |  |
| Level VI  | <input type="checkbox"/>                | TX TRRP-13                  | <input type="checkbox"/>             | Relinquished by:   |           | Date  | Time  | Received by:                         |  | Date                                     | Time |  |  |                         |  |             |  |                              |  |
| NJ DKQP   | <input type="checkbox"/>                | NYSDEC Category             | <input type="checkbox"/>             | Relinquished by Commercial Carrier:                                      |           |   |       | Temperature upon receipt             |  | 0.9 °C                                   |      |  |  |                         |  |             |  |                              |  |
| EQIS 4-file format/SHA  |   |                             |                                      | UPS _____ FedEx <input checked="" type="checkbox"/> Other _____          |           |   |       |                                      |  |  |      |  |  |                         |  |             |  |                              |  |
| EDD Required?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | If yes, format: Standard (flat file) |  |           |   |       |                                      |  |  |      |  |  |                         |  |             |  |                              |  |

*San*

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15

## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-107673-1

**Login Number: 107673**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: McBeth, Jessica**

| Question   | Answer | Comment                  |
|--|--------|--------------------------|
| The cooler's custody seal is intact.   | True   |                          |
| The cooler or samples do not appear to have been compromised or tampered with.             | True   |                          |
| Samples were received on ice.  | True   |                          |
| Cooler Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen).        | True   |                          |
| Cooler Temperature is recorded.  | True   |                          |
| WV: Container Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen). | N/A    |                          |
| WV: Container Temperature is recorded.   | N/A    |                          |
| COC is present.  | True   |                          |
| COC is filled out in ink and legible.  | True   |                          |
| COC is filled out with all pertinent information.  | True   |                          |
| There are no discrepancies between the containers received and the COC.                    | True   |                          |
| Sample containers have legible labels.   | True   |                          |
| Containers are not broken or leaking.  | True   |                          |
| Sample collection date/times are provided.   | True   |                          |
| Appropriate sample containers are used.  | True   |                          |
| Sample bottles are completely filled.  | False  | Limited volume received. |
| There is sufficient vol. for all requested analyses.                                       | True   |                          |
| Is the Field Sampler's name present on COC?  | True   |                          |
| Sample custody seals are intact.   | N/A    |                          |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?                | N/A    |                          |



## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-102985-1

Client Project/Site: N Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



Authorized for release by:

11/6/2022 9:19:51 PM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer". The signature is written in a cursive, flowing style.

---

Kelly Bauer  
Project Manager  
11/6/2022 9:19:51 PM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 11 |
| Lab Chronicle . . . . .            | 12 |
| Certification Summary . . . . .    | 13 |
| Method Summary . . . . .           | 14 |
| Sample Summary . . . . .           | 15 |
| Chain of Custody . . . . .         | 16 |
| Receipt Checklists . . . . .       | 17 |

# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-102985-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |



# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-102985-1

---

## Job ID: 410-102985-1

---

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

### Narrative

---

Job Narrative  
410-102985-1

### Receipt

The sample was received on 10/22/2022 9:50 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.1°C

### PFAS

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-102985-1

Client Sample ID: 40-33\_20221019

Lab Sample ID: 410-102985-1

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil | Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|-----|-----|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 0.56   | J         | 1.7 | 0.42 | ng/L | 1   |     |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 3.3    |           | 1.7 | 0.42 | ng/L | 1   |     |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 0.51   | J         | 1.7 | 0.42 | ng/L | 1   |     |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 2.4    |           | 1.7 | 0.84 | ng/L | 1   |     |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC



# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-102985-1

**Client Sample ID: 40-33\_20221019**

**Lab Sample ID: 410-102985-1**

Date Collected: 10/19/22 12:05

Matrix: Water

Date Received: 10/22/22 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 0.56      | J         | 1.7      | 0.42 | ng/L |   | 11/02/22 08:24 | 11/04/22 04:39 | 1       |
| Perfluorooctanoic acid (PFOA)        | 3.3       |           | 1.7      | 0.42 | ng/L |   | 11/02/22 08:24 | 11/04/22 04:39 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.7      | 0.42 | ng/L |   | 11/02/22 08:24 | 11/04/22 04:39 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 0.51      | J         | 1.7      | 0.42 | ng/L |   | 11/02/22 08:24 | 11/04/22 04:39 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 2.4       |           | 1.7      | 0.84 | ng/L |   | 11/02/22 08:24 | 11/04/22 04:39 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.7      | 0.42 | ng/L |   | 11/02/22 08:24 | 11/04/22 04:39 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 101       |           | 31 - 182 |      |      |   | 11/02/22 08:24 | 11/04/22 04:39 | 1       |
| 13C8 PFOA                            | 99        |           | 48 - 162 |      |      |   | 11/02/22 08:24 | 11/04/22 04:39 | 1       |
| 13C9 PFNA                            | 113       |           | 51 - 167 |      |      |   | 11/02/22 08:24 | 11/04/22 04:39 | 1       |
| 13C3 PFHxS                           | 106       |           | 28 - 188 |      |      |   | 11/02/22 08:24 | 11/04/22 04:39 | 1       |
| 13C8 PFOS                            | 110       |           | 51 - 159 |      |      |   | 11/02/22 08:24 | 11/04/22 04:39 | 1       |
| 13C6 PFDA                            | 98        |           | 49 - 163 |      |      |   | 11/02/22 08:24 | 11/04/22 04:39 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-102985-1

**Method: 537 IDA - EPA 537 Isotope Dilution**

**Matrix: Water**

**Prep Type: Total/NA**

| Lab Sample ID       | Client Sample ID       | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|---------------------|------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                     |                        | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-102985-1        | 40-33_20221019         | 101   | 99                 | 113                | 106                | 110                | 98                 |
| LCS 410-313017/3-A  | Lab Control Sample     | 97  | 97                 | 105                | 100                | 100                | 106                |
| LCSD 410-313017/4-A | Lab Control Sample Dup | 97  | 94                 | 112                | 99                 | 103                | 97                 |
| MB 410-313017/1-A   | Method Blank           | 131   | 129                | 161                | 134                | 144                | 132                |

**Surrogate Legend**

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-102985-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-313017/1-A**  
**Matrix: Water**  
**Analysis Batch: 313488**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 313017**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 1.0  | ng/L |   | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 11/02/22 08:24 | 11/04/22 02:26 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 131       |           | 31 - 182 | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| 13C8 PFOA        | 129       |           | 48 - 162 | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| 13C9 PFNA        | 161       |           | 51 - 167 | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| 13C3 PFHxS       | 134       |           | 28 - 188 | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| 13C8 PFOS        | 144       |           | 51 - 159 | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| 13C6 PFDA        | 132       |           | 49 - 163 | 11/02/22 08:24 | 11/04/22 02:26 | 1       |

**Lab Sample ID: LCS 410-313017/3-A**  
**Matrix: Water**  
**Analysis Batch: 313488**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 313017**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 25.3       |               | ng/L |   | 99   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 25.4       |               | ng/L |   | 99   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 21.9       |               | ng/L |   | 94   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 24.8       |               | ng/L |   | 105  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 25.5       |               | ng/L |   | 100  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 97        |           | 31 - 182 |
| 13C8 PFOA        | 97        |           | 48 - 162 |
| 13C9 PFNA        | 105       |           | 51 - 167 |
| 13C3 PFHxS       | 100       |           | 28 - 188 |
| 13C8 PFOS        | 100       |           | 51 - 159 |
| 13C6 PFDA        | 106       |           | 49 - 163 |

**Lab Sample ID: LCSD 410-313017/4-A**  
**Matrix: Water**  
**Analysis Batch: 313488**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 313017**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-----------|
|                                      |             |             |                |      |   |      |             |     |           |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 25.1        |                | ng/L |   | 98   | 51 - 145    | 1   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 24.1        |                | ng/L |   | 94   | 61 - 139    | 5   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 21.1        |                | ng/L |   | 90   | 58 - 134    | 4   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 24.0        |                | ng/L |   | 101  | 45 - 150    | 3   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 26.7        |                | ng/L |   | 104  | 56 - 138    | 5   | 30        |

Eurofins Lancaster Laboratories Environment Testing, LLC

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-102985-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 97               |                  | 31 - 182      |
| 13C8 PFOA               | 94               |                  | 48 - 162      |
| 13C9 PFNA               | 112              |                  | 51 - 167      |
| 13C3 PFHxS              | 99               |                  | 28 - 188      |
| 13C8 PFOS               | 103              |                  | 51 - 159      |
| 13C6 PFDA               | 97               |                  | 49 - 163      |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-102985-1

## LCMS

### Prep Batch: 313017

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-102985-1        | 40-33_20221019         | Total/NA  | Water  | 537 IDA |            |
| MB 410-313017/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-313017/3-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-313017/4-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 313488

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-102985-1        | 40-33_20221019         | Total/NA  | Water  | 537 IDA | 313017     |
| MB 410-313017/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 313017     |
| LCS 410-313017/3-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 313017     |
| LCSD 410-313017/4-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 313017     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-102985-1

**Client Sample ID: 40-33\_20221019**

**Lab Sample ID: 410-102985-1**

**Date Collected: 10/19/22 12:05**

**Matrix: Water**

**Date Received: 10/22/22 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 313017       | RC3V          | ELLE | 11/02/22 08:24       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 313488       | JVK6          | ELLE | 11/04/22 04:39       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300





# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-102985-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-102985-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-102985-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-102985-1  | 40-33_20221019   | Water  | 10/19/22 12:05 | 10/22/22 09:50 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14


15

# Environmental Analysis Request/Chain of Custody



**Lancaster Laboratories  
Environmental**

Acct. # \_\_\_\_\_ Group # \_\_\_\_\_ Sample # \_\_\_\_\_

|   |  |   |       |                                     |           |  |      |                                      |      |  |  |                         |  |  |  |  |
|---|--|---|-------|-------------------------------------|-----------|--|------|--------------------------------------|------|--|--|-------------------------|--|--|--|--|
| Client: <b>Sanborn Head &amp; Associates</b>  |  |   |       | <b>Matrix</b>                       |           |  |      | <b>Analyses Requested</b>            |      |  |  | <b>For Lab Use Only</b> |  |  |  |  |
| Project Name/# N Monmouth PFAS 5197.01  |  | Site ID #:  |       | <input type="checkbox"/> Tissue     |           | <input checked="" type="checkbox"/> Ground |      | <input type="checkbox"/> Surface     |      | <b>Preservation and Filtration Codes</b> |  |                         |  | SF # _____   |  |  |
| Project Manager: Andrew Buchy   |  | P.O. #: 5197.01   |       | <input type="checkbox"/> Potable    |           | <input type="checkbox"/> NPDES             |      | <input type="checkbox"/> Field Blank |      |  |  |                         |  |  |  |  |
| Sampler: Don Kelsey   |  | PWSID #:  |       | <input type="checkbox"/> Soil       |           | <input type="checkbox"/> Water             |      | <input type="checkbox"/> Other:      |      |  |  |                         |  |  |  |  |
| Phone #: 603-229-1900   |  | Quote #:  |       | <input type="checkbox"/> Sediment   |           |  |      |                                      |      |  |  |                         |  |  |  |  |
| State where samples were collected: ME  |  | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>                                  |       |                                     |           |  |      |                                      |      |  |  |                         |  |  |  |  |
| <b>Sample Identification</b>  |  | <b>Collection</b>   |       |                                     |           |  |      |                                      |      |  |  |                         |  |  |  |  |
|   |  | Date  | Time  | Grab                                | Composite |  |      |                                      |      |  |  |                         |  |  |  |  |
| 40-33_20221019  |  | 10/19/2022  | 12:05 | X                                   |           | X  |      | 2                                    | X    |  |  |                         |  | <br>410-102985 Chain of Custody |  |  |
|   |  |   |       |                                     |           |  |      |                                      |      |  |  |                         |  |  |  |  |
| <b>Turnaround Time Requested (TAT)</b> (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>               |  |   |       | Relinquished by: <i>[Signature]</i> |           | Date                                       | Time | Received by:                         | Date |  |  |                         |  | Time   |  |  |
| (Rush TAT is subject to laboratory approval and surcharges)   |  |   |       |                                     |           | 10/2/22                                    | 1300 |                                      |      |  |  |                         |  |  |  |  |
| Date results are needed:  |  |   |       | Relinquished by:                    |           | Date                                       | Time | Received by:                         | Date | Time                                     |  |                         |  |  |  |  |
| Rush results requested by (please check): E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>  |  |   |       |                                     |           |  |      |                                      |      |  |  |                         |  |  |  |  |
| E-mail Address:   |  |   |       | Relinquished by:                    |           | Date                                       | Time | Received by:                         | Date | Time                                     |  |                         |  |  |  |  |
| Phone:  |  |   |       |                                     |           |  |      |                                      |      |  |  |                         |  |  |  |  |
| <b>Data Package Options</b> (please check if required)  |  |   |       | Relinquished by:                    |           | Date                                       | Time | Received by:                         | Date | Time                                     |  |                         |  |  |  |  |
| Level I <input type="checkbox"/> MA MCP <input type="checkbox"/>  |  | Level II <input checked="" type="checkbox"/> CT RCP <input type="checkbox"/>                              |       |                                     |           |  |      |                                      |      |  |  |                         |  |  |  |  |
| Level VI <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/>   |  | NJ DKQP <input type="checkbox"/> NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B |       |                                     |           |  |      |                                      |      |  |  |                         |  |  |  |  |
| EQUS 4-file format/SHA  |  |   |       | Relinquished by Commercial Carrier: |           |  |      |                                      |      |  |  |                         |  | Temperature upon receipt <u>3.1</u> °C   |  |  |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, format: <input type="checkbox"/> Standard (flat file) |  |   |       |                                     |           | UPS _____ FedEx _____ Other _____          |      |                                      |      |  |  |                         |  |  |  |  |

CB

*WMM*

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15

## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-102985-1

Login Number: 102985

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: McBeth, Jessica

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-95919-1  
Client Project/Site: N. Monmouth PFAS 5197.01

For:  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



Authorized for release by:  
9/9/2022 9:27:41 AM

Kelly Bauer, Project Manager  
(717)556-7262  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer".

---

Kelly Bauer  
Project Manager  
9/9/2022 9:27:41 AM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 11 |
| Lab Chronicle . . . . .            | 12 |
| Certification Summary . . . . .    | 13 |
| Method Summary . . . . .           | 14 |
| Sample Summary . . . . .           | 15 |
| Chain of Custody . . . . .         | 16 |
| Receipt Checklists . . . . .       | 17 |



# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95919-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95919-1

---

**Job ID: 410-95919-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative**  
**410-95919-1**

**Receipt**

The samples were received on 8/26/2022 10:28 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95919-1

**Client Sample ID: 40-35\_20220825**

**Lab Sample ID: 410-95919-1**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 6.2    |           | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 27     |           | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorononanoic acid (PFNA)        | 0.54   | J         | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 2.2    |           | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 12     |           | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |

**Client Sample ID: FB-01\_20220825**

**Lab Sample ID: 410-95919-2**

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95919-1

**Client Sample ID: 40-35\_20220825**

**Lab Sample ID: 410-95919-1**

Date Collected: 08/25/22 09:20

Matrix: Water

Date Received: 08/26/22 10:28

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 6.2       |           | 1.6      | 0.40 | ng/L |   | 09/06/22 16:57 | 09/08/22 12:53 | 1       |
| Perfluorooctanoic acid (PFOA)        | 27        |           | 1.6      | 0.40 | ng/L |   | 09/06/22 16:57 | 09/08/22 12:53 | 1       |
| Perfluorononanoic acid (PFNA)        | 0.54      | J         | 1.6      | 0.40 | ng/L |   | 09/06/22 16:57 | 09/08/22 12:53 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 2.2       |           | 1.6      | 0.40 | ng/L |   | 09/06/22 16:57 | 09/08/22 12:53 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 12        |           | 1.6      | 0.40 | ng/L |   | 09/06/22 16:57 | 09/08/22 12:53 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.6      | 0.40 | ng/L |   | 09/06/22 16:57 | 09/08/22 12:53 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 94        |           | 31 - 182 |      |      |   | 09/06/22 16:57 | 09/08/22 12:53 | 1       |
| 13C8 PFOA                            | 88        |           | 48 - 162 |      |      |   | 09/06/22 16:57 | 09/08/22 12:53 | 1       |
| 13C9 PFNA                            | 93        |           | 51 - 167 |      |      |   | 09/06/22 16:57 | 09/08/22 12:53 | 1       |
| 13C3 PFHxS                           | 98        |           | 28 - 188 |      |      |   | 09/06/22 16:57 | 09/08/22 12:53 | 1       |
| 13C8 PFOS                            | 91        |           | 51 - 159 |      |      |   | 09/06/22 16:57 | 09/08/22 12:53 | 1       |
| 13C6 PFDA                            | 88        |           | 49 - 163 |      |      |   | 09/06/22 16:57 | 09/08/22 12:53 | 1       |

**Client Sample ID: FB-01\_20220825**

**Lab Sample ID: 410-95919-2**

Date Collected: 08/25/22 09:00

Matrix: Water

Date Received: 08/26/22 10:28

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND        |           | 1.8      | 0.45 | ng/L |   | 09/01/22 15:28 | 09/03/22 04:37 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND        |           | 1.8      | 0.45 | ng/L |   | 09/01/22 15:28 | 09/03/22 04:37 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.8      | 0.45 | ng/L |   | 09/01/22 15:28 | 09/03/22 04:37 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |           | 1.8      | 0.45 | ng/L |   | 09/01/22 15:28 | 09/03/22 04:37 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND        |           | 1.8      | 0.45 | ng/L |   | 09/01/22 15:28 | 09/03/22 04:37 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.8      | 0.45 | ng/L |   | 09/01/22 15:28 | 09/03/22 04:37 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 107       |           | 31 - 182 |      |      |   | 09/01/22 15:28 | 09/03/22 04:37 | 1       |
| 13C8 PFOA                            | 107       |           | 48 - 162 |      |      |   | 09/01/22 15:28 | 09/03/22 04:37 | 1       |
| 13C9 PFNA                            | 102       |           | 51 - 167 |      |      |   | 09/01/22 15:28 | 09/03/22 04:37 | 1       |
| 13C3 PFHxS                           | 107       |           | 28 - 188 |      |      |   | 09/01/22 15:28 | 09/03/22 04:37 | 1       |
| 13C8 PFOS                            | 101       |           | 51 - 159 |      |      |   | 09/01/22 15:28 | 09/03/22 04:37 | 1       |
| 13C6 PFDA                            | 102       |           | 49 - 163 |      |      |   | 09/01/22 15:28 | 09/03/22 04:37 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95919-1

**Method: 537 IDA - EPA 537 Isotope Dilution**

**Matrix: Water**

**Prep Type: Total/NA**

| Lab Sample ID      | Client Sample ID       | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                        | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-95919-1        | 40-35_20220825         | 94  | 88                 | 93                 | 98                 | 91                 | 88                 |
| 410-95919-2        | FB-01_20220825         | 107   | 107                | 102                | 107                | 101                | 102                |
| LCS 410-292093/2-A | Lab Control Sample     | 96  | 100                | 97                 | 105                | 103                | 99                 |
| LCS 410-293098/2-A | Lab Control Sample     | 99  | 97                 | 104                | 106                | 104                | 98                 |
| LCS 410-292093/3-A | Lab Control Sample Dup | 98  | 105                | 109                | 107                | 107                | 108                |
| MB 410-292093/1-A  | Method Blank           | 110   | 107                | 100                | 112                | 103                | 98                 |
| MB 410-293098/1-A  | Method Blank           | 93  | 94                 | 100                | 97                 | 99                 | 97                 |

**Surrogate Legend**

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95919-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-292093/1-A**  
**Matrix: Water**  
**Analysis Batch: 292589**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 292093**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 09/01/22 15:28 | 09/03/22 03:42 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/01/22 15:28 | 09/03/22 03:42 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/01/22 15:28 | 09/03/22 03:42 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 09/01/22 15:28 | 09/03/22 03:42 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 0.569  | J         | 2.0 | 0.50 | ng/L |   | 09/01/22 15:28 | 09/03/22 03:42 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/01/22 15:28 | 09/03/22 03:42 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 110       |           | 31 - 182 | 09/01/22 15:28 | 09/03/22 03:42 | 1       |
| 13C8 PFOA        | 107       |           | 48 - 162 | 09/01/22 15:28 | 09/03/22 03:42 | 1       |
| 13C9 PFNA        | 100       |           | 51 - 167 | 09/01/22 15:28 | 09/03/22 03:42 | 1       |
| 13C3 PFHxS       | 112       |           | 28 - 188 | 09/01/22 15:28 | 09/03/22 03:42 | 1       |
| 13C8 PFOS        | 103       |           | 51 - 159 | 09/01/22 15:28 | 09/03/22 03:42 | 1       |
| 13C6 PFDA        | 98        |           | 49 - 163 | 09/01/22 15:28 | 09/03/22 03:42 | 1       |

**Lab Sample ID: LCS 410-292093/2-A**  
**Matrix: Water**  
**Analysis Batch: 292589**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 292093**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 23.8       |               | ng/L |   | 93   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 26.3       |               | ng/L |   | 103  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 22.7       |               | ng/L |   | 97   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 22.7       |               | ng/L |   | 96   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 25.4       |               | ng/L |   | 99   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 96        |           | 31 - 182 |
| 13C8 PFOA        | 100       |           | 48 - 162 |
| 13C9 PFNA        | 97        |           | 51 - 167 |
| 13C3 PFHxS       | 105       |           | 28 - 188 |
| 13C8 PFOS        | 103       |           | 51 - 159 |
| 13C6 PFDA        | 99        |           | 49 - 163 |

**Lab Sample ID: LCSD 410-292093/3-A**  
**Matrix: Water**  
**Analysis Batch: 292589**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 292093**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-----------|
|                                      |             |             |                |      |   |      |             |     |           |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 25.4        |                | ng/L |   | 99   | 51 - 145    | 7   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 25.5        |                | ng/L |   | 100  | 61 - 139    | 3   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 22.8        |                | ng/L |   | 98   | 58 - 134    | 1   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 24.4        |                | ng/L |   | 103  | 45 - 150    | 7   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 23.9        |                | ng/L |   | 93   | 56 - 138    | 6   | 30        |

# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95919-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| Isotope Dilution | LCSD      |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 98        |           | 31 - 182 |
| 13C8 PFOA        | 105       |           | 48 - 162 |
| 13C9 PFNA        | 109       |           | 51 - 167 |
| 13C3 PFHxS       | 107       |           | 28 - 188 |
| 13C8 PFOS        | 107       |           | 51 - 159 |
| 13C6 PFDA        | 108       |           | 49 - 163 |

Lab Sample ID: MB 410-293098/1-A

Matrix: Water

Analysis Batch: 293723

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 293098

| Analyte                              | MB MB  |           | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 16:57 | 09/08/22 09:00 | 1       |

| Isotope Dilution | MB MB     |           | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 93        |           | 31 - 182 | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| 13C8 PFOA        | 94        |           | 48 - 162 | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| 13C9 PFNA        | 100       |           | 51 - 167 | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| 13C3 PFHxS       | 97        |           | 28 - 188 | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| 13C8 PFOS        | 99        |           | 51 - 159 | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| 13C6 PFDA        | 97        |           | 49 - 163 | 09/06/22 16:57 | 09/08/22 09:00 | 1       |

Lab Sample ID: LCS 410-293098/2-A

Matrix: Water

Analysis Batch: 293723

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 293098

| Analyte                              | Spike Added | LCS    |           | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|
|                                      |             | Result | Qualifier |      |   |      |             |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 24.7   |           | ng/L |   | 97   | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 24.0   |           | ng/L |   | 94   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 25.1   |           | ng/L |   | 98   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 20.3   |           | ng/L |   | 87   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 22.3   |           | ng/L |   | 94   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 24.7   |           | ng/L |   | 97   | 56 - 138    |

| Isotope Dilution | LCS       |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 99        |           | 31 - 182 |
| 13C8 PFOA        | 97        |           | 48 - 162 |
| 13C9 PFNA        | 104       |           | 51 - 167 |
| 13C3 PFHxS       | 106       |           | 28 - 188 |
| 13C8 PFOS        | 104       |           | 51 - 159 |
| 13C6 PFDA        | 98        |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95919-1

## LCMS

### Prep Batch: 292093

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-95919-2         | FB-01_20220825         | Total/NA  | Water  | 537 IDA |            |
| MB 410-292093/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-292093/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-292093/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 292589

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-95919-2         | FB-01_20220825         | Total/NA  | Water  | 537 IDA | 292093     |
| MB 410-292093/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 292093     |
| LCS 410-292093/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 292093     |
| LCSD 410-292093/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 292093     |

### Prep Batch: 293098

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95919-1        | 40-35_20220825     | Total/NA  | Water  | 537 IDA |            |
| MB 410-293098/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-293098/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 293723

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95919-1        | 40-35_20220825     | Total/NA  | Water  | 537 IDA | 293098     |
| MB 410-293098/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 293098     |
| LCS 410-293098/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 293098     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95919-1

**Client Sample ID: 40-35\_20220825**

**Lab Sample ID: 410-95919-1**

Date Collected: 08/25/22 09:20

Matrix: Water

Date Received: 08/26/22 10:28

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 293098       | JU9U    | ELLE | 09/06/22 16:57       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 293723       | ZG8V    | ELLE | 09/08/22 12:53       |

**Client Sample ID: FB-01\_20220825**

**Lab Sample ID: 410-95919-2**

Date Collected: 08/25/22 09:00

Matrix: Water

Date Received: 08/26/22 10:28

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 292093       | JU9U    | ELLE | 09/01/22 15:28       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 292589       | ZG8V    | ELLE | 09/03/22 04:37       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95919-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95919-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95919-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-95919-1   | 40-35_20220825   | Water  | 08/25/22 09:20 | 08/26/22 10:28 |
| 410-95919-2   | FB-01_20220825   | Water  | 08/25/22 09:00 | 08/26/22 10:28 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



Lancaster Laboratories Environmental

Enviro



410-95919 Chain of Custody

request/Chain of Custody

Sample # \_\_\_\_\_

|   |  |  |  |  |  |         |  |              |  |  |  |
|---|--|--|--|--|--|---------|--|--------------|--|--|--|
| Client: <b>Sanborn Head &amp; Associates</b>  |  | matrix   |  | Analyses Requested   |  |         |  |              | For Lab Use Only   |  |  |
| Project Name/#: N. Monmouth PFAS 5197.01  |  | Site ID #:   |  | Preservation and Filtration Codes  |  |         |  |              | SF #: _____  |  |  |
| Project Manager: Andrew Buchy   |  | P.O. #: 5197.01  |  | <input type="checkbox"/> Tissue<br><input type="checkbox"/> Ground <input type="checkbox"/> Surface<br><input type="checkbox"/> Potable <input checked="" type="checkbox"/> NPDES <input type="checkbox"/> Field Blank<br><input type="checkbox"/> Sediment<br><input type="checkbox"/> Water<br><input type="checkbox"/> Other: _____ |  |         |  |              | SCR #: _____   |  |  |
| Sampler: Don Kelsey   |  | PWSID #:   |  |  |  |         |  |              | Preservation Codes<br>H = HCl            T = Thiosulfate<br>N = HNO <sub>3</sub> B = NaOH<br>S = H <sub>2</sub> SO <sub>4</sub> P = H <sub>3</sub> PO <sub>4</sub><br>F = Field Filtered   O = Other |  |  |
| Phone #: 603-229-1900   |  | Quote #:   |  |  |  |         |  |              |  |  |  |
| State where samples were collected: ME  |  | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>   |  | Total # of Containers  |  |         |  |              | Remarks  |  |  |
| Collection  |  | Date   |  | Time   |  | Grab    |  | Composite    |  | PFAS 537 Mod with isotope dilution (6 compounds) |  |
| Sample Identification   |  | 40-35_20220825   |  | 8/25/2022  |  | 9:20    |  | X            |  | X  |  |
|   |  | FB-01_20220825   |  | 8/25/2022  |  | 9:00    |  | X            |  | 2  |  |
| Turnaround Time Requested (TAT) (please check):   |  | Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |  | Relinquished by:   |  | Date    |  | Time         |  | Received by:                                     |  |
| (Rush TAT is subject to laboratory approval and surcharges.)  |  |  |  | <i>[Signature]</i>   |  | 8/25/22 |  | 13:30        |  |  |  |
| Date results are needed:  |  | Relinquished by:   |  | Date   |  | Time    |  | Received by: |  | Date   |  |
| Rush results requested by (please check):   |  | E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>             |  | Relinquished by:   |  | Date    |  | Time         |  | Received by:                                     |  |
| E-mail Address:   |  | Relinquished by:   |  | Date   |  | Time    |  | Received by: |  | Date   |  |
| Phone:  |  | Relinquished by:   |  | Date   |  | Time    |  | Received by: |  | Date   |  |
| Data Package Options (please check if required)   |  | Relinquished by:   |  | Date   |  | Time    |  | Received by: |  | Date   |  |
| Level I <input type="checkbox"/> MA MCP <input type="checkbox"/>  |  | Relinquished by:   |  | Date   |  | Time    |  | Received by: |  | Date   |  |
| Level II <input checked="" type="checkbox"/> CT RCP <input type="checkbox"/>                              |  | Relinquished by:   |  | Date   |  | Time    |  | Received by: |  | Date   |  |
| Level VI <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/>                                     |  | Relinquished by:   |  | Date   |  | Time    |  | Received by: |  | Date   |  |
| NJ DKQP <input type="checkbox"/> NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B |  | Relinquished by Commercial Carrier:  |  | Date   |  | Time    |  | Received by: |  | Date   |  |
| EQUS 4-file format/SHA  |  | Relinquished by:   |  | Date   |  | Time    |  | Received by: |  | Date   |  |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                         |  | If yes, format: Standard (flat file)                                       |  | Relinquished by:   |  | Date    |  | Time         |  | Received by:                                     |  |
| Temperature upon receipt  |  | 2.0 °C   |  | Relinquished by:   |  | Date    |  | Time         |  | Received by:                                     |  |
| UPS _____ FedEx _____ Other _____   |  | Relinquished by:   |  | Date   |  | Time    |  | Received by: |  | Date   |  |



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-95919-1

Login Number: 95919

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Renner, Melissa

| Question   | Answer | Comment      |
|--|--------|--------------|
| The cooler's custody seal is intact.   | True   |              |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |              |
| Samples were received on ice.  | True   |              |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |              |
| Cooler Temperature is recorded.  | True   |              |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |              |
| WV: Container Temperature is recorded.   | N/A    |              |
| COC is present.  | True   |              |
| COC is filled out in ink and legible.  | True   |              |
| COC is filled out with all pertinent information.                                    | True   |              |
| There are no discrepancies between the containers received and the COC.              | True   |              |
| Sample containers have legible labels.   | True   |              |
| Containers are not broken or leaking.  | True   |              |
| Sample collection date/times are provided.   | True   |              |
| Appropriate sample containers are used.  | True   |              |
| Sample bottles are completely filled.  | True   |              |
| There is sufficient vol. for all requested analyses.                                 | True   |              |
| Is the Field Sampler's name present on COC?  | True   |              |
| Sample custody seals are intact.   | N/A    | Not present. |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |              |



## Environment Testing

# ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-103010-1

Client Project/Site: N Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy

Authorized for release by:  
11/7/2022 10:47:57 PM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer". The signature is written in a cursive, flowing style.

---

Kelly Bauer  
Project Manager  
11/7/2022 10:47:57 PM





# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 11 |
| Lab Chronicle . . . . .            | 12 |
| Certification Summary . . . . .    | 13 |
| Method Summary . . . . .           | 14 |
| Sample Summary . . . . .           | 15 |
| Chain of Custody . . . . .         | 16 |
| Receipt Checklists . . . . .       | 17 |

# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103010-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103010-1

---

## Job ID: 410-103010-1

---

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

### Narrative

---

Job Narrative  
410-103010-1

### Receipt

The sample was received on 10/22/2022 9:50 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.1°C

### PFAS

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103010-1

Client Sample ID: 40-37\_20221020

Lab Sample ID: 410-103010-1

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluorooctanoic acid (PFOA)       | 2.4    |           | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS) | 1.2    | J         | 1.6 | 0.81 | ng/L | 1       |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC



# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103010-1

**Client Sample ID: 40-37\_20221020**

**Lab Sample ID: 410-103010-1**

Date Collected: 10/20/22 10:02

Matrix: Water

Date Received: 10/22/22 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                                    | Result       | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|--------------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)            | ND           |           | 1.6 | 0.40 | ng/L |   | 11/02/22 16:57 | 11/07/22 00:32 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>       | <b>2.4</b>   |           | 1.6 | 0.40 | ng/L |   | 11/02/22 16:57 | 11/07/22 00:32 | 1       |
| Perfluorononanoic acid (PFNA)              | ND           |           | 1.6 | 0.40 | ng/L |   | 11/02/22 16:57 | 11/07/22 00:32 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)       | ND           |           | 1.6 | 0.40 | ng/L |   | 11/02/22 16:57 | 11/07/22 00:32 | 1       |
| <b>Perfluorooctanesulfonic acid (PFOS)</b> | <b>1.2 J</b> |           | 1.6 | 0.81 | ng/L |   | 11/02/22 16:57 | 11/07/22 00:32 | 1       |
| Perfluorodecanoic acid (PFDA)              | ND           |           | 1.6 | 0.40 | ng/L |   | 11/02/22 16:57 | 11/07/22 00:32 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 109       |           | 31 - 182 | 11/02/22 16:57 | 11/07/22 00:32 | 1       |
| 13C8 PFOA        | 102       |           | 48 - 162 | 11/02/22 16:57 | 11/07/22 00:32 | 1       |
| 13C9 PFNA        | 102       |           | 51 - 167 | 11/02/22 16:57 | 11/07/22 00:32 | 1       |
| 13C3 PFHxS       | 104       |           | 28 - 188 | 11/02/22 16:57 | 11/07/22 00:32 | 1       |
| 13C8 PFOS        | 110       |           | 51 - 159 | 11/02/22 16:57 | 11/07/22 00:32 | 1       |
| 13C6 PFDA        | 100       |           | 49 - 163 | 11/02/22 16:57 | 11/07/22 00:32 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103010-1

**Method: 537 IDA - EPA 537 Isotope Dilution**

**Matrix: Water**

**Prep Type: Total/NA**

**Percent Isotope Dilution Recovery (Acceptance Limits)**

| Lab Sample ID       | Client Sample ID       | C4PFHA<br>(31-182) | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
|---------------------|------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 410-103010-1        | 40-37_20221020         | 109                | 102                | 102                | 104                | 110                | 100                |
| LCS 410-313258/2-A  | Lab Control Sample     | 121                | 115                | 114                | 120                | 123                | 110                |
| LCSD 410-313258/3-A | Lab Control Sample Dup | 110                | 102                | 102                | 110                | 109                | 105                |
| MB 410-313258/1-A   | Method Blank           | 106                | 101                | 98                 | 104                | 101                | 88                 |

**Surrogate Legend**

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103010-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-313258/1-A**  
**Matrix: Water**  
**Analysis Batch: 314390**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 313258**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 11/02/22 16:57 | 11/06/22 21:23 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 11/02/22 16:57 | 11/06/22 21:23 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 11/02/22 16:57 | 11/06/22 21:23 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 11/02/22 16:57 | 11/06/22 21:23 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 1.0  | ng/L |   | 11/02/22 16:57 | 11/06/22 21:23 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 11/02/22 16:57 | 11/06/22 21:23 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 106       |           | 31 - 182 | 11/02/22 16:57 | 11/06/22 21:23 | 1       |
| 13C8 PFOA        | 101       |           | 48 - 162 | 11/02/22 16:57 | 11/06/22 21:23 | 1       |
| 13C9 PFNA        | 98        |           | 51 - 167 | 11/02/22 16:57 | 11/06/22 21:23 | 1       |
| 13C3 PFHxS       | 104       |           | 28 - 188 | 11/02/22 16:57 | 11/06/22 21:23 | 1       |
| 13C8 PFOS        | 101       |           | 51 - 159 | 11/02/22 16:57 | 11/06/22 21:23 | 1       |
| 13C6 PFDA        | 88        |           | 49 - 163 | 11/02/22 16:57 | 11/06/22 21:23 | 1       |

**Lab Sample ID: LCS 410-313258/2-A**  
**Matrix: Water**  
**Analysis Batch: 314390**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 313258**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 23.6       |               | ng/L |   | 92   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 24.4       |               | ng/L |   | 95   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 20.1       |               | ng/L |   | 86   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 21.2       |               | ng/L |   | 90   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 22.1       |               | ng/L |   | 86   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 121       |           | 31 - 182 |
| 13C8 PFOA        | 115       |           | 48 - 162 |
| 13C9 PFNA        | 114       |           | 51 - 167 |
| 13C3 PFHxS       | 120       |           | 28 - 188 |
| 13C8 PFOS        | 123       |           | 51 - 159 |
| 13C6 PFDA        | 110       |           | 49 - 163 |

**Lab Sample ID: LCSD 410-313258/3-A**  
**Matrix: Water**  
**Analysis Batch: 314390**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 313258**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-----------|
|                                      |             |             |                |      |   |      |             |     |           |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 23.6        |                | ng/L |   | 92   | 51 - 145    | 0   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 24.2        |                | ng/L |   | 94   | 61 - 139    | 1   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.6        |                | ng/L |   | 84   | 58 - 134    | 3   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 22.0        |                | ng/L |   | 93   | 45 - 150    | 4   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 24.6        |                | ng/L |   | 96   | 56 - 138    | 11  | 30        |

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103010-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 110              |                  | 31 - 182      |
| 13C8 PFOA               | 102              |                  | 48 - 162      |
| 13C9 PFNA               | 102              |                  | 51 - 167      |
| 13C3 PFHxS              | 110              |                  | 28 - 188      |
| 13C8 PFOS               | 109              |                  | 51 - 159      |
| 13C6 PFDA               | 105              |                  | 49 - 163      |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103010-1

## LCMS

### Prep Batch: 313258

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-103010-1        | 40-37_20221020         | Total/NA  | Water  | 537 IDA |            |
| MB 410-313258/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-313258/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-313258/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 314390

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-103010-1        | 40-37_20221020         | Total/NA  | Water  | 537 IDA | 313258     |
| MB 410-313258/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 313258     |
| LCS 410-313258/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 313258     |
| LCSD 410-313258/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 313258     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103010-1

**Client Sample ID: 40-37\_20221020**

**Lab Sample ID: 410-103010-1**

**Date Collected: 10/20/22 10:02**

**Matrix: Water**

**Date Received: 10/22/22 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 313258       | QLP7          | ELLE | 11/02/22 16:57       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 314390       | MT26          | ELLE | 11/07/22 00:32       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103010-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103010-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103010-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-103010-1  | 40-37_20221020   | Water  | 10/20/22 10:02 | 10/22/22 09:50 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-103010-1

Login Number: 103010

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Burkholder, Conrad

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |



## Environment Testing

# ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-103011-1

Client Project/Site: N Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy

Authorized for release by:  
11/6/2022 9:28:25 PM

Kelly Bauer, Project Manager  
(717)556-7262  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15





Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in cursive script that reads "Kelly Bauer".

---

Kelly Bauer  
Project Manager  
11/6/2022 9:28:25 PM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 11 |
| Lab Chronicle . . . . .            | 12 |
| Certification Summary . . . . .    | 13 |
| Method Summary . . . . .           | 14 |
| Sample Summary . . . . .           | 15 |
| Chain of Custody . . . . .         | 16 |
| Receipt Checklists . . . . .       | 17 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103011-1

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103011-1

---

**Job ID: 410-103011-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative**  
**410-103011-1**

**Receipt**

The sample was received on 10/22/2022 9:50 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.1°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103011-1

**Client Sample ID: 40-40\_20221019**

**Lab Sample ID: 410-103011-1**

No Detections.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103011-1

**Client Sample ID: 40-40\_20221019**

**Lab Sample ID: 410-103011-1**

Date Collected: 10/19/22 11:20

Matrix: Water

Date Received: 10/22/22 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 1.6 | 0.40 | ng/L |   | 11/02/22 08:24 | 11/04/22 04:50 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 1.6 | 0.40 | ng/L |   | 11/02/22 08:24 | 11/04/22 04:50 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 1.6 | 0.40 | ng/L |   | 11/02/22 08:24 | 11/04/22 04:50 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 1.6 | 0.40 | ng/L |   | 11/02/22 08:24 | 11/04/22 04:50 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 1.6 | 0.80 | ng/L |   | 11/02/22 08:24 | 11/04/22 04:50 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.6 | 0.40 | ng/L |   | 11/02/22 08:24 | 11/04/22 04:50 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 93        |           | 31 - 182 | 11/02/22 08:24 | 11/04/22 04:50 | 1       |
| 13C8 PFOA        | 95        |           | 48 - 162 | 11/02/22 08:24 | 11/04/22 04:50 | 1       |
| 13C9 PFNA        | 110       |           | 51 - 167 | 11/02/22 08:24 | 11/04/22 04:50 | 1       |
| 13C3 PFHxS       | 98        |           | 28 - 188 | 11/02/22 08:24 | 11/04/22 04:50 | 1       |
| 13C8 PFOS        | 105       |           | 51 - 159 | 11/02/22 08:24 | 11/04/22 04:50 | 1       |
| 13C6 PFDA        | 84        |           | 49 - 163 | 11/02/22 08:24 | 11/04/22 04:50 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103011-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID       | Client Sample ID       | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|---------------------|------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                     |                        | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-103011-1        | 40-40_20221019         | 93  | 95                 | 110                | 98                 | 105                | 84                 |
| LCS 410-313017/3-A  | Lab Control Sample     | 97  | 97                 | 105                | 100                | 100                | 106                |
| LCSD 410-313017/4-A | Lab Control Sample Dup | 97  | 94                 | 112                | 99                 | 103                | 97                 |
| MB 410-313017/1-A   | Method Blank           | 131   | 129                | 161                | 134                | 144                | 132                |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103011-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-313017/1-A**  
**Matrix: Water**  
**Analysis Batch: 313488**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 313017**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 1.0  | ng/L |   | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 11/02/22 08:24 | 11/04/22 02:26 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 131       |           | 31 - 182 | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| 13C8 PFOA        | 129       |           | 48 - 162 | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| 13C9 PFNA        | 161       |           | 51 - 167 | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| 13C3 PFHxS       | 134       |           | 28 - 188 | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| 13C8 PFOS        | 144       |           | 51 - 159 | 11/02/22 08:24 | 11/04/22 02:26 | 1       |
| 13C6 PFDA        | 132       |           | 49 - 163 | 11/02/22 08:24 | 11/04/22 02:26 | 1       |

**Lab Sample ID: LCS 410-313017/3-A**  
**Matrix: Water**  
**Analysis Batch: 313488**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 313017**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 25.3       |               | ng/L |   | 99   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 25.4       |               | ng/L |   | 99   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 21.9       |               | ng/L |   | 94   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 24.8       |               | ng/L |   | 105  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 25.5       |               | ng/L |   | 100  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 97        |           | 31 - 182 |
| 13C8 PFOA        | 97        |           | 48 - 162 |
| 13C9 PFNA        | 105       |           | 51 - 167 |
| 13C3 PFHxS       | 100       |           | 28 - 188 |
| 13C8 PFOS        | 100       |           | 51 - 159 |
| 13C6 PFDA        | 106       |           | 49 - 163 |

**Lab Sample ID: LCSD 410-313017/4-A**  
**Matrix: Water**  
**Analysis Batch: 313488**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 313017**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-----------|
|                                      |             |             |                |      |   |      |             |     |           |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 25.1        |                | ng/L |   | 98   | 51 - 145    | 1   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 24.1        |                | ng/L |   | 94   | 61 - 139    | 5   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 21.1        |                | ng/L |   | 90   | 58 - 134    | 4   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 24.0        |                | ng/L |   | 101  | 45 - 150    | 3   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 26.7        |                | ng/L |   | 104  | 56 - 138    | 5   | 30        |



# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103011-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 97               |                  | 31 - 182      |
| 13C8 PFOA               | 94               |                  | 48 - 162      |
| 13C9 PFNA               | 112              |                  | 51 - 167      |
| 13C3 PFHxS              | 99               |                  | 28 - 188      |
| 13C8 PFOS               | 103              |                  | 51 - 159      |
| 13C6 PFDA               | 97               |                  | 49 - 163      |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103011-1

## LCMS

### Prep Batch: 313017

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-103011-1        | 40-40_20221019         | Total/NA  | Water  | 537 IDA |            |
| MB 410-313017/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-313017/3-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-313017/4-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 313488

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-103011-1        | 40-40_20221019         | Total/NA  | Water  | 537 IDA | 313017     |
| MB 410-313017/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 313017     |
| LCS 410-313017/3-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 313017     |
| LCSD 410-313017/4-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 313017     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103011-1

**Client Sample ID: 40-40\_20221019**

**Lab Sample ID: 410-103011-1**

**Date Collected: 10/19/22 11:20**

**Matrix: Water**

**Date Received: 10/22/22 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 313017       | RC3V    | ELLE | 11/02/22 08:24       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 313488       | JVK6    | ELLE | 11/04/22 04:50       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103011-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103011-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103011-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-103011-1  | 40-40_20221019   | Water  | 10/19/22 11:20 | 10/22/22 09:50 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

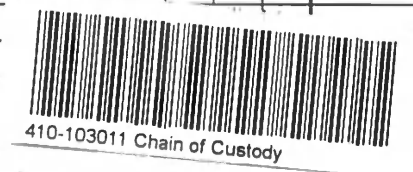
# Environmental Analysis Request/Chain of Custody



Lancaster Laboratories  
Environmental

Acct. # \_\_\_\_\_ Group # \_\_\_\_\_ Sample # \_\_\_\_\_

|   |  |   |                              |  |  |   |  |          |             |              |                         |                          |   |        |                |      |  |
|---|--|---|------------------------------|--|--|---|--|----------|-------------|--------------|-------------------------|--------------------------|---|--------|----------------|------|--|
| Client: <b>Sanborn Head &amp; Associates</b>                                      |  |   |                              | <b>Matrix</b>  |  | <b>Analyses Requested</b>                                       |  |          |             |              | <b>For Lab Use Only</b> |                          |   |        |                |      |  |
| Project Name/#: N. Monmouth PFAS 5197.01  |  | Site ID #:  |                              | <input type="checkbox"/> Tissue  | <input checked="" type="checkbox"/> Ground | <input type="checkbox"/> Surface                                | <b>Preservation and Filtration Codes</b>                                     |          |             |              |                         | SF #: _____              |   |        |                |      |  |
| Project Manager: Andrew Buchy   |  | P.O. #: 5197.01   |                              | <input type="checkbox"/> Sediment  | <input type="checkbox"/> Potable           | <input type="checkbox"/> NPDES                                  | Total # of Containers<br>PFAS 537 Mod with isotope dilution<br>(6 compounds) |          |             |              |                         | SCR #: _____             |   |        |                |      |  |
| Sampler: Don Kelsey   |  | PWSID #:  |                              | <input type="checkbox"/> Soil  | <input type="checkbox"/> Water             | <input type="checkbox"/> Other:                                 |  |          |             |              |                         |                          |   |        |                |      |  |
| Phone #: 603-229-1900   |  | Quote #:  |                              | <input type="checkbox"/> Polable   | <input type="checkbox"/> NPDES             | <input type="checkbox"/> Field Blank                            |  |          |             |              |                         |                          |   |        |                |      |  |
| State where samples were collected: ME  |  | For Compliance Yes <input type="checkbox"/> No <input type="checkbox"/> |                              | <input type="checkbox"/> Composite   |  |   |  |          |             |              |                         |                          |   |        |                |      |  |
| <b>Collection</b>   |  |   | <b>Sample Identification</b> |  | <b>Date</b>                                |   | <b>Time</b>  |          | <b>Grab</b> |              | <b>Composite</b>        |                          | Preservation Codes<br>H = HCl      T = Thiosulfate<br>N = HNO <sub>3</sub> B = NaOH<br>S = H <sub>2</sub> SO <sub>4</sub> P = H <sub>3</sub> PO <sub>4</sub><br>F = Field Filtered      O = Other |        |                |      |  |
|   |  |   | 40-40_20221019               |  | 10/19/2022                                 |   | 16:20  |          | X           |              |                         |                          |   |        | <b>Remarks</b> |      |  |
|   |  |   |                              |  |  |   |  |          |             |              |                         |                          |   |        |                |      |  |
|   |  |   |                              |  |  |   |  |          |             |              |                         |                          |   |        |                |      |  |
|   |  |   |                              |  |  |   |  |          |             |              |                         |                          |   |        |                |      |  |
|   |  |   |                              |  |  |   |  |          |             |              |                         |                          |   |        |                |      |  |
|   |  |   |                              |  |  |   |  |          |             |              |                         |                          |   |        |                |      |  |
|   |  |   |                              |  |  |   |  |          |             |              |                         |                          |   |        |                |      |  |
|   |  |   |                              |  |  |   |  |          |             |              |                         |                          |   |        |                |      |  |
|   |  |   |                              |  |  |   |  |          |             |              |                         |                          |   |        |                |      |  |
| Turnaround Time Requested (TAT) (please check):                                   |  |   |                              | Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |  | Relinquished by:  |  | Date     |             | Time         |                         | Received by:             |   | Date   |                | Time |  |
| (Rush TAT is subject to laboratory approval and surcharges)                       |  |   |                              |  |  |   |  | 10/21/22 |             | 13:00        |                         |                          |   |        |                |      |  |
| Date results are needed:  |  |   |                              |  |  | Relinquished by:  |  | Date     |             | Time         |                         | Received by:             |   | Date   |                | Time |  |
| Rush results requested by (please check):   |  |   |                              | E-Mail <input checked="" type="checkbox"/> Phone <input type="checkbox"/>  |  | Relinquished by:  |  | Date     |             | Time         |                         | Received by:             |   | Date   |                | Time |  |
| E-mail Address:   |  |   |                              |  |  | Relinquished by:  |  | Date     |             | Time         |                         | Received by:             |   | Date   |                | Time |  |
| Phone:  |  |   |                              |  |  | Relinquished by:  |  | Date     |             | Time         |                         | Received by:             |   | Date   |                | Time |  |
| <b>Data Package Options</b> (please check if required)                            |  |   |                              |  |  | Relinquished by:  |  | Date     |             | Time         |                         | Received by:             |   | Date   |                | Time |  |
| Level I <input type="checkbox"/>  |  | MA MCP <input type="checkbox"/>   |                              | Relinquished by:   |  | Date  |  | Time     |             | Received by: |                         | Date                     |   | Time   |                |      |  |
| Level II <input checked="" type="checkbox"/>                                      |  | CT RCP <input type="checkbox"/>   |                              | Relinquished by:   |  | Date  |  | Time     |             | Received by: |                         | Date                     |   | Time   |                |      |  |
| Level VI <input type="checkbox"/>   |  | TX TRRP-13 <input type="checkbox"/>                                     |                              | Relinquished by:   |  | Date  |  | Time     |             | Received by: |                         | Date                     |   | Time   |                |      |  |
| NJ DKQP <input type="checkbox"/>  |  | NYSDEC Category <input type="checkbox"/>                                |                              | A or <input type="checkbox"/> B  |  | Relinquished by Commercial Carrier:                             |  | Date     |             | Time         |                         | Received by:             |   | Date   |                | Time |  |
| EQUS 4-file format/SHA  |  |   |                              |  |  |   |  |          |             |              |                         |                          |   |        |                |      |  |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |  |   |                              | If yes, format: Standard (flat file)                                       |  | UPS _____ FedEx <input checked="" type="checkbox"/> Other _____ |  |          |             |              |                         | Temperature upon receipt |   | 3.1 °C |                |      |  |



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-103011-1

Login Number: 103011

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Burkholder, Conrad

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |



## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-103005-1

Client Project/Site: N Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



*Authorized for release by:*  
11/9/2022 12:07:55 AM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer". The signature is written in a cursive style.

---

Kelly Bauer  
Project Manager  
11/9/2022 12:07:55 AM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 10 |
| Lab Chronicle . . . . .            | 11 |
| Certification Summary . . . . .    | 12 |
| Method Summary . . . . .           | 13 |
| Sample Summary . . . . .           | 14 |
| Chain of Custody . . . . .         | 15 |
| Receipt Checklists . . . . .       | 16 |

# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103005-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103005-1

---

## Job ID: 410-103005-1

---

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

### Narrative

---

**Job Narrative**  
**410-103005-1**

### Receipt

The sample was received on 10/22/2022 9:50 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.1°C

### PFAS

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103005-1

Client Sample ID: 46-64\_20221021

Lab Sample ID: 410-103005-1

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 1.3    | J         | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 5.4    |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 0.60   | J         | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 2.6    |           | 1.7 | 0.85 | ng/L | 1       |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103005-1

**Client Sample ID: 46-64\_20221021**

**Lab Sample ID: 410-103005-1**

Date Collected: 10/21/22 11:15

Matrix: Water

Date Received: 10/22/22 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 1.3    | J         | 1.7 | 0.42 | ng/L |   | 11/03/22 17:24 | 11/08/22 05:16 | 1       |
| Perfluorooctanoic acid (PFOA)        | 5.4    |           | 1.7 | 0.42 | ng/L |   | 11/03/22 17:24 | 11/08/22 05:16 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 1.7 | 0.42 | ng/L |   | 11/03/22 17:24 | 11/08/22 05:16 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 0.60   | J         | 1.7 | 0.42 | ng/L |   | 11/03/22 17:24 | 11/08/22 05:16 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 2.6    |           | 1.7 | 0.85 | ng/L |   | 11/03/22 17:24 | 11/08/22 05:16 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.7 | 0.42 | ng/L |   | 11/03/22 17:24 | 11/08/22 05:16 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 108       |           | 31 - 182 | 11/03/22 17:24 | 11/08/22 05:16 | 1       |
| 13C8 PFOA        | 109       |           | 48 - 162 | 11/03/22 17:24 | 11/08/22 05:16 | 1       |
| 13C9 PFNA        | 114       |           | 51 - 167 | 11/03/22 17:24 | 11/08/22 05:16 | 1       |
| 13C3 PFHxS       | 110       |           | 28 - 188 | 11/03/22 17:24 | 11/08/22 05:16 | 1       |
| 13C8 PFOS        | 114       |           | 51 - 159 | 11/03/22 17:24 | 11/08/22 05:16 | 1       |
| 13C6 PFDA        | 101       |           | 49 - 163 | 11/03/22 17:24 | 11/08/22 05:16 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103005-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID      | Client Sample ID   | C4PFHA<br>(31-182) | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 410-103005-1       | 46-64_20221021     | 108                | 109                | 114                | 110                | 114                | 101                |
| LCS 410-313710/2-A | Lab Control Sample | 90                 | 90                 | 93                 | 92                 | 96                 | 90                 |
| MB 410-313710/1-A  | Method Blank       | 91                 | 93                 | 96                 | 95                 | 99                 | 91                 |

### Surrogate Legend

C4PFHA = 13C4 PFHpA

C8PFOA = 13C8 PFOA

C9PFNA = 13C9 PFNA

C3PFHS = 13C3 PFHxS

C8PFOS = 13C8 PFOS

C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103005-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-313710/1-A**

**Matrix: Water**

**Analysis Batch: 314977**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 313710**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 1.0  | ng/L |   | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 11/03/22 17:24 | 11/08/22 01:30 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 91        |           | 31 - 182 | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| 13C8 PFOA        | 93        |           | 48 - 162 | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| 13C9 PFNA        | 96        |           | 51 - 167 | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| 13C3 PFHxS       | 95        |           | 28 - 188 | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| 13C8 PFOS        | 99        |           | 51 - 159 | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| 13C6 PFDA        | 91        |           | 49 - 163 | 11/03/22 17:24 | 11/08/22 01:30 | 1       |

**Lab Sample ID: LCS 410-313710/2-A**

**Matrix: Water**

**Analysis Batch: 314977**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 313710**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 25.1       |               | ng/L |   | 98   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 26.3       |               | ng/L |   | 103  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 24.1       |               | ng/L |   | 103  | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 24.9       |               | ng/L |   | 105  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 26.5       |               | ng/L |   | 104  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 90        |           | 31 - 182 |
| 13C8 PFOA        | 90        |           | 48 - 162 |
| 13C9 PFNA        | 93        |           | 51 - 167 |
| 13C3 PFHxS       | 92        |           | 28 - 188 |
| 13C8 PFOS        | 96        |           | 51 - 159 |
| 13C6 PFDA        | 90        |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103005-1

## LCMS

### Prep Batch: 313710

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-103005-1       | 46-64_20221021     | Total/NA  | Water  | 537 IDA |            |
| MB 410-313710/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-313710/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 314977

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-103005-1       | 46-64_20221021     | Total/NA  | Water  | 537 IDA | 313710     |
| MB 410-313710/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 313710     |
| LCS 410-313710/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 313710     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103005-1

**Client Sample ID: 46-64\_20221021**

**Lab Sample ID: 410-103005-1**

**Date Collected: 10/21/22 11:15**

**Matrix: Water**

**Date Received: 10/22/22 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 313710       | K9VR          | ELLE | 11/03/22 17:24       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 314977       | PY4D          | ELLE | 11/08/22 05:16       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103005-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |



# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103005-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103005-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-103005-1  | 46-64_20221021   | Water  | 10/21/22 11:15 | 10/22/22 09:50 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-103005-1

Login Number: 103005

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Burkholder, Conrad

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |



## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-103008-1

Client Project/Site: N Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



*Authorized for release by:*

11/9/2022 9:34:15 AM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in cursive script that reads "Kelly Bauer".

---

Kelly Bauer  
Project Manager  
11/9/2022 9:34:15 AM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 10 |
| Lab Chronicle . . . . .            | 11 |
| Certification Summary . . . . .    | 12 |
| Method Summary . . . . .           | 13 |
| Sample Summary . . . . .           | 14 |
| Chain of Custody . . . . .         | 15 |
| Receipt Checklists . . . . .       | 16 |

# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103008-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103008-1

---

**Job ID: 410-103008-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

---

**Narrative**

**Job Narrative  
410-103008-1**

**Receipt**

The sample was received on 10/22/2022 9:50 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.1°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103008-1

**Client Sample ID: 46-97\_20221021**

**Lab Sample ID: 410-103008-1**

| Analyte                       | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluorooctanoic acid (PFOA) | 1.0    | J         | 1.7 | 0.44 | ng/L | 1       |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103008-1

**Client Sample ID: 46-97\_20221021**

**Lab Sample ID: 410-103008-1**

**Date Collected: 10/21/22 10:10**

**Matrix: Water**

**Date Received: 10/22/22 09:50**

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result     | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|------------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND         |           | 1.7 | 0.44 | ng/L |   | 11/03/22 17:24 | 11/08/22 05:38 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b> | <b>1.0</b> | <b>J</b>  | 1.7 | 0.44 | ng/L |   | 11/03/22 17:24 | 11/08/22 05:38 | 1       |
| Perfluorononanoic acid (PFNA)        | ND         |           | 1.7 | 0.44 | ng/L |   | 11/03/22 17:24 | 11/08/22 05:38 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND         |           | 1.7 | 0.44 | ng/L |   | 11/03/22 17:24 | 11/08/22 05:38 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND         |           | 1.7 | 0.87 | ng/L |   | 11/03/22 17:24 | 11/08/22 05:38 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND         |           | 1.7 | 0.44 | ng/L |   | 11/03/22 17:24 | 11/08/22 05:38 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 98        |           | 31 - 182 | 11/03/22 17:24 | 11/08/22 05:38 | 1       |
| 13C8 PFOA        | 98        |           | 48 - 162 | 11/03/22 17:24 | 11/08/22 05:38 | 1       |
| 13C9 PFNA        | 96        |           | 51 - 167 | 11/03/22 17:24 | 11/08/22 05:38 | 1       |
| 13C3 PFHxS       | 101       |           | 28 - 188 | 11/03/22 17:24 | 11/08/22 05:38 | 1       |
| 13C8 PFOS        | 98        |           | 51 - 159 | 11/03/22 17:24 | 11/08/22 05:38 | 1       |
| 13C6 PFDA        | 91        |           | 49 - 163 | 11/03/22 17:24 | 11/08/22 05:38 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103008-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID      | Client Sample ID   | C4PFHA<br>(31-182) | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 410-103008-1       | 46-97_20221021     | 98                 | 98                 | 96                 | 101                | 98                 | 91                 |
| LCS 410-313710/2-A | Lab Control Sample | 90                 | 90                 | 93                 | 92                 | 96                 | 90                 |
| MB 410-313710/1-A  | Method Blank       | 91                 | 93                 | 96                 | 95                 | 99                 | 91                 |

### Surrogate Legend

C4PFHA = 13C4 PFHpA  
C8PFOA = 13C8 PFOA  
C9PFNA = 13C9 PFNA  
C3PFHS = 13C3 PFHxS  
C8PFOS = 13C8 PFOS  
C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103008-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-313710/1-A**  
**Matrix: Water**  
**Analysis Batch: 314977**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 313710**

| Analyte                              | MB Result | MB Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|--------------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND        |              | 2.0 | 0.50 | ng/L |   | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND        |              | 2.0 | 0.50 | ng/L |   | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |              | 2.0 | 0.50 | ng/L |   | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |              | 2.0 | 0.50 | ng/L |   | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND        |              | 2.0 | 1.0  | ng/L |   | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |              | 2.0 | 0.50 | ng/L |   | 11/03/22 17:24 | 11/08/22 01:30 | 1       |

| Isotope Dilution | MB %Recovery | MB Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|--------------|--------------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 91           |              | 31 - 182 | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| 13C8 PFOA        | 93           |              | 48 - 162 | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| 13C9 PFNA        | 96           |              | 51 - 167 | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| 13C3 PFHxS       | 95           |              | 28 - 188 | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| 13C8 PFOS        | 99           |              | 51 - 159 | 11/03/22 17:24 | 11/08/22 01:30 | 1       |
| 13C6 PFDA        | 91           |              | 49 - 163 | 11/03/22 17:24 | 11/08/22 01:30 | 1       |

**Lab Sample ID: LCS 410-313710/2-A**  
**Matrix: Water**  
**Analysis Batch: 314977**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 313710**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | Limits   |
|--------------------------------------|-------------|------------|---------------|------|---|------|----------|
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 25.3       |               | ng/L |   | 99   | 59 - 145 |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 25.1       |               | ng/L |   | 98   | 51 - 145 |
| Perfluorononanoic acid (PFNA)        | 25.6        | 26.3       |               | ng/L |   | 103  | 61 - 139 |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 24.1       |               | ng/L |   | 103  | 58 - 134 |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 24.9       |               | ng/L |   | 105  | 45 - 150 |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 26.5       |               | ng/L |   | 104  | 56 - 138 |

| Isotope Dilution | LCS %Recovery | LCS Qualifier | Limits   |
|------------------|---------------|---------------|----------|
| 13C4 PFHpA       | 90            |               | 31 - 182 |
| 13C8 PFOA        | 90            |               | 48 - 162 |
| 13C9 PFNA        | 93            |               | 51 - 167 |
| 13C3 PFHxS       | 92            |               | 28 - 188 |
| 13C8 PFOS        | 96            |               | 51 - 159 |
| 13C6 PFDA        | 90            |               | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103008-1

## LCMS

### Prep Batch: 313710

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-103008-1       | 46-97_20221021     | Total/NA  | Water  | 537 IDA |            |
| MB 410-313710/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-313710/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 314977

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-103008-1       | 46-97_20221021     | Total/NA  | Water  | 537 IDA | 313710     |
| MB 410-313710/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 313710     |
| LCS 410-313710/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 313710     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103008-1

**Client Sample ID: 46-97\_20221021**

**Lab Sample ID: 410-103008-1**

**Date Collected: 10/21/22 10:10**

**Matrix: Water**

**Date Received: 10/22/22 09:50**

| <u>Prep Type</u> | <u>Batch Type</u> | <u>Batch Method</u> | <u>Run</u> | <u>Dilution Factor</u> | <u>Batch Number</u> | <u>Analyst</u> | <u>Lab</u> | <u>Prepared or Analyzed</u> |
|------------------|-------------------|---------------------|------------|------------------------|---------------------|----------------|------------|-----------------------------|
| Total/NA         | Prep              | 537 IDA             |            |                        | 313710              | K9VR           | ELLE       | 11/03/22 17:24              |
| Total/NA         | Analysis          | 537 IDA             |            | 1                      | 314977              | PY4D           | ELLE       | 11/08/22 05:38              |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103008-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |



# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103008-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-103008-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-103008-1  | 46-97_20221021   | Water  | 10/21/22 10:10 | 10/22/22 09:50 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14


15

# Environmental Analysis Request/Chain of Custody



Lancaster Laboratories  
Environmental

Acct. # \_\_\_\_\_ Group # \_\_\_\_\_ Sample # \_\_\_\_\_

|   |  |                   |  |  |  |                                     |  |   |  |                                  |  |   |  |   |  |             |  |  |  |              |  |
|---|--|-------------------|--|--|--|-------------------------------------|--|---|--|----------------------------------|--|---|--|---|--|-------------|--|--|--|--------------|--|
| Client: <b>Sanborn Head &amp; Associates</b>  |  |                   |  | <b>Matrix</b>  |  |                                     |  | <b>Analyses Requested</b>   |  |                                  |  |   |  | <b>For Lab Use Only</b>   |  |             |  |  |  |              |  |
| Project Name/#: N. Monmouth PFAS 5197.01  |  |                   |  | Site ID #: _____   |  |                                     |  | <input type="checkbox"/> Tissue<br><input checked="" type="checkbox"/> Ground<br><input type="checkbox"/> Surface<br><input type="checkbox"/> Potable<br><input type="checkbox"/> NPDES<br><input type="checkbox"/> Field Blank<br>Total # of Containers: _____<br>PFAS 537 Mod with isotope dilution (6 compounds) |  |                                  |  |   |  | Preservation and Filtration Codes   |  |             |  |  |  | SF #: _____  |  |
| Project Manager: Andrew Buchy   |  |                   |  | P.O. #: 5197.01  |  |                                     |  |   |  |                                  |  |   |  | Preservation Codes<br>H = HCl      T = Thiosulfate<br>N = HNO <sub>3</sub> B = NaOH<br>S = H <sub>2</sub> SO <sub>4</sub> P = H <sub>3</sub> PO <sub>4</sub><br>F = Field Filtered      O = Other |  |             |  |  |  | SCR #: _____ |  |
| Sampler: Don Kelsey   |  |                   |  | PWSID #: _____   |  |                                     |  | Total # of Containers: _____<br>PFAS 537 Mod with isotope dilution (6 compounds)  |  |                                  |  |   |  | Remarks<br>Batch QC   |  |             |  |  |  |              |  |
| Phone #: 603-229-1900   |  |                   |  | Quote #: _____   |  |                                     |  |   |  |                                  |  |   |  |   |  |             |  |  |  |              |  |
| State where samples were collected: ME  |  |                   |  | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>     |  |                                     |  |   |  |                                  |  |   |  |   |  |             |  |  |  |              |  |
| <b>Sample Identification</b>  |  | <b>Collection</b> |  | <b>Soil</b>  |  | <b>Water</b>                        |  | <b>Other:</b>   |  | <b>Grab</b>                      |  | <b>Composite</b>  |  |   |  |             |  |  |  |              |  |
| 46-97_20221021  |  | 10/21/2022 10:10  |  | <input checked="" type="checkbox"/>  |  | <input checked="" type="checkbox"/> |  | X   |  | X                                |  |   |  |   |  |             |  |  |  |              |  |
| <br>410-103008 Chain of Custody                |  |                   |  |  |  |                                     |  |   |  |                                  |  |   |  |   |  |             |  |  |  |              |  |
| <b>Turnaround Time Requested (TAT)</b> (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |  |                   |  | Relinquished by: <i>[Signature]</i>  |  |                                     |  | Date: 10/21/22  |  | Time: 13:00                      |  | Received by: <i>[Signature]</i>   |  | Date: _____   |  | Time: _____ |  |  |  |              |  |
| (Rush TAT is subject to laboratory approval and surcharges.)  |  |                   |  | Relinquished by: <i>[Signature]</i>  |  |                                     |  | Date: _____   |  | Time: _____                      |  | Received by: <i>[Signature]</i>   |  | Date: _____   |  | Time: _____ |  |  |  |              |  |
| Date results are needed: _____  |  |                   |  | Relinquished by: <i>[Signature]</i>  |  |                                     |  | Date: _____   |  | Time: _____                      |  | Received by: <i>[Signature]</i>   |  | Date: _____   |  | Time: _____ |  |  |  |              |  |
| Rush results requested by (please check): E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>                          |  |                   |  | Relinquished by: <i>[Signature]</i>  |  |                                     |  | Date: _____   |  | Time: _____                      |  | Received by: <i>[Signature]</i>   |  | Date: _____   |  | Time: _____ |  |  |  |              |  |
| E-mail Address: _____   |  |                   |  | Relinquished by: <i>[Signature]</i>  |  |                                     |  | Date: _____   |  | Time: _____                      |  | Received by: <i>[Signature]</i>   |  | Date: _____   |  | Time: _____ |  |  |  |              |  |
| Phone: _____  |  |                   |  | Relinquished by: <i>[Signature]</i>  |  |                                     |  | Date: _____   |  | Time: _____                      |  | Received by: <i>[Signature]</i>   |  | Date: _____   |  | Time: _____ |  |  |  |              |  |
| <b>Data Package Options</b> (please check if required)  |  |                   |  | Relinquished by: <i>[Signature]</i>  |  |                                     |  | Date: _____   |  | Time: _____                      |  | Received by: <i>[Signature]</i>   |  | Date: 10/22/22  |  | Time: 9:50  |  |  |  |              |  |
| Level I <input type="checkbox"/> MA MCP <input type="checkbox"/>  |  |                   |  | Level II <input checked="" type="checkbox"/> CT RCP <input type="checkbox"/> |  |                                     |  | Level VI <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/>   |  |                                  |  | NJ DKQP <input type="checkbox"/> NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B |  |   |  |             |  |  |  |              |  |
| Relinquished by Commercial Carrier: _____   |  |                   |  | Relinquished by: <i>[Signature]</i>  |  |                                     |  | Date: _____   |  | Time: _____                      |  | Received by: <i>[Signature]</i>   |  | Date: _____   |  | Time: _____ |  |  |  |              |  |
| EquiS 4-file format/SHA   |  |                   |  | Relinquished by: <i>[Signature]</i>  |  |                                     |  | Date: _____   |  | Time: _____                      |  | Received by: <i>[Signature]</i>   |  | Date: _____   |  | Time: _____ |  |  |  |              |  |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |  |                   |  | If yes, format: _____ Standard (flat file)                                   |  |                                     |  | UPS _____ FedEx <input checked="" type="checkbox"/> Other _____   |  | Temperature upon receipt: 3.1 °C |  |   |  |   |  |             |  |  |  |              |  |

*MM*

*CB*



# Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-103008-1

**Login Number: 103008**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: Burkholder, Conrad**

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |



## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-85998-1  
Client Project/Site: PFAS in Groundwater

For:  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



Authorized for release by:  
6/17/2022 7:53:12 AM

Kelly Bauer, Project Manager  
(717)556-7262  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer". The signature is written in a cursive, flowing style.

---

Kelly Bauer  
Project Manager  
6/17/2022 7:53:12 AM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 10 |
| Lab Chronicle . . . . .            | 11 |
| Certification Summary . . . . .    | 12 |
| Method Summary . . . . .           | 13 |
| Sample Summary . . . . .           | 14 |
| Chain of Custody . . . . .         | 15 |
| Receipt Checklists . . . . .       | 16 |

# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| B         | Compound was found in the blank and sample.  |
| cn        | Refer to Case Narrative for further detail   |
| I         | Value is EMPC (estimated maximum possible concentration).  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-1

---

**Job ID: 410-85998-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

---

**Narrative**

**Job Narrative  
410-85998-1**

**Receipt**

The samples were received on 6/2/2022 10:23 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.5°C

**PFAS**

Method PFC\_IDA: Perfluorooctanesulfonic acid (PFOS) were detected in the method blank associated with the following sample: 52-1\_20220601 (410-85998-1). The following action was taken: This sample(s) was re-extracted within the required holding time and Perfluorooctanesulfonic acid (PFOS) was again detected in the re-extracted method blank.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-1

Client Sample ID: 52-1\_20220601

Lab Sample ID: 410-85998-1

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 7.1    |           | 1.6 | 0.41 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 39     |           | 1.6 | 0.41 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 5.9    |           | 1.6 | 0.41 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 28     | I B cn    | 1.6 | 0.41 | ng/L | 1       |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: PFAS in Groundwater

Job ID: 410-85998-1

**Client Sample ID: 52-1\_20220601**

**Lab Sample ID: 410-85998-1**

Date Collected: 06/01/22 13:26

Matrix: Water

Date Received: 06/02/22 10:23

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 7.1       |           | 1.6      | 0.41 | ng/L |   | 06/14/22 09:01 | 06/16/22 19:18 | 1       |
| Perfluorooctanoic acid (PFOA)        | 39        |           | 1.6      | 0.41 | ng/L |   | 06/14/22 09:01 | 06/16/22 19:18 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 06/14/22 09:01 | 06/16/22 19:18 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 5.9       |           | 1.6      | 0.41 | ng/L |   | 06/14/22 09:01 | 06/16/22 19:18 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 28        | I B cn    | 1.6      | 0.41 | ng/L |   | 06/14/22 09:01 | 06/16/22 19:18 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 06/14/22 09:01 | 06/16/22 19:18 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 96        |           | 31 - 182 |      |      |   | 06/14/22 09:01 | 06/16/22 19:18 | 1       |
| 13C8 PFOA                            | 98        |           | 48 - 162 |      |      |   | 06/14/22 09:01 | 06/16/22 19:18 | 1       |
| 13C9 PFNA                            | 89        |           | 51 - 167 |      |      |   | 06/14/22 09:01 | 06/16/22 19:18 | 1       |
| 13C3 PFHxS                           | 97        |           | 28 - 188 |      |      |   | 06/14/22 09:01 | 06/16/22 19:18 | 1       |
| 13C8 PFOS                            | 92        |           | 51 - 159 |      |      |   | 06/14/22 09:01 | 06/16/22 19:18 | 1       |
| 13C6 PFDA                            | 103       |           | 49 - 163 |      |      |   | 06/14/22 09:01 | 06/16/22 19:18 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: PFAS in Groundwater

Job ID: 410-85998-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID   | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|--------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                    | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-85998-1        | 52-1_20220601      | 96  | 98                 | 89                 | 97                 | 92                 | 103                |
| LCS 410-265235/2-A | Lab Control Sample | 100   | 107                | 101                | 107                | 103                | 107                |
| MB 410-265235/1-A  | Method Blank       | 89  | 92                 | 98                 | 102                | 91                 | 87                 |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA





# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: PFAS in Groundwater

Job ID: 410-85998-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-265235/1-A**  
**Matrix: Water**  
**Analysis Batch: 266251**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 265235**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 0.829  | J         | 2.0 | 0.50 | ng/L |   | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/14/22 09:01 | 06/16/22 18:42 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 89        |           | 31 - 182 | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| 13C8 PFOA        | 92        |           | 48 - 162 | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| 13C9 PFNA        | 98        |           | 51 - 167 | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| 13C3 PFHxS       | 102       |           | 28 - 188 | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| 13C8 PFOS        | 91        |           | 51 - 159 | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| 13C6 PFDA        | 87        |           | 49 - 163 | 06/14/22 09:01 | 06/16/22 18:42 | 1       |

**Lab Sample ID: LCS 410-265235/2-A**  
**Matrix: Water**  
**Analysis Batch: 266251**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 265235**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 22.4       |               | ng/L |   | 88   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 23.9       |               | ng/L |   | 93   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.7       |               | ng/L |   | 84   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 21.7       |               | ng/L |   | 92   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 22.7       |               | ng/L |   | 89   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 100       |           | 31 - 182 |
| 13C8 PFOA        | 107       |           | 48 - 162 |
| 13C9 PFNA        | 101       |           | 51 - 167 |
| 13C3 PFHxS       | 107       |           | 28 - 188 |
| 13C8 PFOS        | 103       |           | 51 - 159 |
| 13C6 PFDA        | 107       |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-1

## LCMS

### Prep Batch: 264473

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-85998-1 - RE   | 52-1_20220601      | Total/NA  | Water  | 537 IDA |            |
| MB 410-264473/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-264473/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 264736

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-85998-1 - RE   | 52-1_20220601      | Total/NA  | Water  | 537 IDA | 264473     |
| MB 410-264473/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 264473     |
| LCS 410-264473/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 264473     |

### Prep Batch: 265235

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-85998-1        | 52-1_20220601      | Total/NA  | Water  | 537 IDA |            |
| MB 410-265235/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-265235/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 266251

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-85998-1        | 52-1_20220601      | Total/NA  | Water  | 537 IDA | 265235     |
| MB 410-265235/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 265235     |
| LCS 410-265235/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 265235     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-1

**Client Sample ID: 52-1\_20220601**

**Lab Sample ID: 410-85998-1**

**Date Collected: 06/01/22 13:26**

**Matrix: Water**

**Date Received: 06/02/22 10:23**

| <u>Prep Type</u> | <u>Batch Type</u> | <u>Batch Method</u> | <u>Run</u> | <u>Dilution Factor</u> | <u>Batch Number</u> | <u>Prepared or Analyzed</u> | <u>Analyst</u> | <u>Lab</u> |
|------------------|-------------------|---------------------|------------|------------------------|---------------------|-----------------------------|----------------|------------|
| Total/NA         | Prep              | 537 IDA             | RE         |                        | 264473              | 06/11/22 01:39              | ZWK6           | ELLE       |
| Total/NA         | Analysis          | 537 IDA             | RE         | 1                      | 264736              | 06/13/22 16:08              | ZG8V           | ELLE       |
| Total/NA         | Prep              | 537 IDA             |            |                        | 265235              | 06/14/22 09:01              | PMS9           | ELLE       |
| Total/NA         | Analysis          | 537 IDA             |            | 1                      | 266251              | 06/16/22 19:18              | QD9Y           | ELLE       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-85998-1   | 52-1_20220601    | Water  | 06/01/22 13:26 | 06/02/22 10:23 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

**Eurofins Lancaster Laboratories Environme**

2425 New Holland Pike  
Lancaster, PA 17601  
Phone: 717-856-2300 Fax: 717-856-2681

**Chain of Custody Record**



410-85998 Chain of Custody



Environment Testing  
America

|  |  |  |  |   |  |  |  |                                     |  |                            |  |
|--|--|--|--|---|--|--|--|-------------------------------------|--|----------------------------|--|
| <b>Client Information</b>  |  | Sampler: <u>D. Kessler (C. YIGOR)</u>  |  | Lab PM: Bauer, Kelly  |  | COC No: 410-57598-16397.1  |  |                                     |  |                            |  |
| Client Contact: Shana Whitney  |  | Phone: <u>603.312.4876</u>   |  | E-Mail: Kelly.Bauer@eLeurofinsus.com                        |  | Page: Page 1 of 1  |  |                                     |  |                            |  |
| Company: Sanborn Head & Associates Inc   |  | PWSID:   |  | <b>Analysis Requested</b>                                   |  | Job #: <u>5197.01</u>  |  |                                     |  |                            |  |
| Address: 20 Foundry Street   |  | Due Date Requested:  |  | Field Filtered Sample (Yes or No)<br>PFC_IDA - UCMR3 & PFAS |  | Preservation Codes:<br>A - HCL M - Hexane<br>B - NaOH N - None<br>C - Zn Acetate O - AsNaO2<br>D - Nitric Acid P - Na2O4S<br>E - NaHSO4 R - Na2S2O3<br>F - MeOH S - H2SO4<br>G - Amchlor T - TSP Dodecahydrate<br>H - Ascorbic Acid U - Acetone<br>I - Ice V - MCAA<br>J - DI Water W - pH 4-5<br>K - EDTA Y - Trizma<br>L - EDA Z - other (specify) |  |                                     |  |                            |  |
| City: Concord  |  | TAT Requested (days):  |  |   |  |  |  |                                     |  |                            |  |
| State, Zip: NH, 03301  |  | Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No |  |   |  |  |  |                                     |  |                            |  |
| Phone: <u>603-229-1900</u>   |  | PO #: Purchase Order Requested   |  |   |  |  |  |                                     |  |                            |  |
| Email: SWhitney@sanbornhead.com  |  | WO #:  |  |   |  |  |  |                                     |  |                            |  |
| Project Name: PFAS in Groundwater  |  | Project #: 41010916  |  | Total Number of Containers                                  |  | Other:   |  |                                     |  |                            |  |
| Site: <u>5197.01</u>   |  | SSOW#:   |  |   |  |  |  |                                     |  |                            |  |
| <b>Sample Identification</b>   |  | Sample Date  |  | Sample Time   |  | Sample Type (C=comp, G=grab)   |  | Matrix (Water, Solid, Tissue, A=As) |  | Special Instructions/Note: |  |
| <u>52-1-20220601</u>   |  | <u>6/1/22</u>  |  | <u>13:26</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |
| <u>52-79-20220601</u>  |  |  |  | <u>11:55</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |
| <u>52-45-20220601</u>  |  |  |  | <u>11:04</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |
| <u>52-10-20220601</u>  |  |  |  | <u>10:25</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |
| <u>40-18-20220601</u>  |  |  |  | <u>9:55</u>   |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |
| <u>FB-01-20220601</u>  |  | <u>6/1/22</u>  |  | <u>12:00</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |
| <b>Possible Hazard Identification</b>  |  |  |  |   |  | <b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>  |  |                                     |  |                            |  |
| <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological |  |  |  |   |  | <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months   |  |                                     |  |                            |  |
| Deliverable Requested: I, II, III, IV, Other (specify)   |  |  |  |   |  | Special Instructions/QC Requirements:  |  |                                     |  |                            |  |
| Empty Kit Relinquished by:   |  | Date:  |  | Time:   |  | Method of Shipment:  |  |                                     |  |                            |  |
| Relinquished by: <u>[Signature]</u>  |  | Date/Time: <u>5/25/22 13:30</u>  |  | Company: <u>EPINS SHA</u>                                   |  | Received by: <u>[Signature]</u>  |  | Date/Time: <u>5/31/22</u>           |  | Company: <u>SHA</u>        |  |
| Relinquished by: <u>[Signature]</u>  |  | Date/Time: <u>6/1/22 16:50</u>   |  | Company: <u>SHA</u>   |  | Received by: _____   |  | Date/Time: _____                    |  | Company: _____             |  |
| Relinquished by: _____   |  | Date/Time: _____   |  | Company: _____  |  | Received by: <u>[Signature]</u>  |  | Date/Time: <u>6-2-22 10:23</u>      |  | Company: <u>ELLET</u>      |  |
| Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No   |  | Custody Seal No.: <u>141112</u>  |  | Cooler Temperature(s) °C and Other Remarks: <u>3.5</u>      |  |  |  |                                     |  |                            |  |



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-85998-1

Login Number: 85998

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: McCaskey, Jonathan

| Question  | Answer | Comment |
|---|--------|---------|
| The cooler's custody seal is intact.  | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.    | True   |         |
| Samples were received on ice.   | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).        | True   |         |
| Cooler Temperature is recorded.   | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen). | N/A    |         |
| WV: Container Temperature is recorded.  | N/A    |         |
| COC is present.   | True   |         |
| COC is filled out in ink and legible.   | True   |         |
| COC is filled out with all pertinent information.                                 | True   |         |
| There are no discrepancies between the containers received and the COC.           | True   |         |
| Sample containers have legible labels.  | True   |         |
| Containers are not broken or leaking.   | True   |         |
| Sample collection date/times are provided.  | True   |         |
| Appropriate sample containers are used.   | True   |         |
| Sample bottles are completely filled.   | True   |         |
| There is sufficient vol. for all requested analyses.                              | True   |         |
| Is the Field Sampler's name present on COC?                                       | True   |         |
| Sample custody seals are intact.  | N/A    |         |



## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-95924-1

Client Project/Site: N. Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



*Authorized for release by:*  
9/12/2022 8:33:34 AM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer".

---

Kelly Bauer  
Project Manager  
9/12/2022 8:33:34 AM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 10 |
| Lab Chronicle . . . . .            | 11 |
| Certification Summary . . . . .    | 12 |
| Method Summary . . . . .           | 13 |
| Sample Summary . . . . .           | 14 |
| Chain of Custody . . . . .         | 15 |
| Receipt Checklists . . . . .       | 16 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95924-1

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| ▫              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95924-1

---

## Job ID: 410-95924-1

---

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

### Narrative

---

Job Narrative  
410-95924-1

### Receipt

The sample was received on 8/26/2022 10:28 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C

### PFAS

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95924-1

**Client Sample ID: 52-2\_20220824**

**Lab Sample ID: 410-95924-1**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil | Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|-----|-----|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 2.7    |           | 1.7 | 0.42 | ng/L | 1   |     |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 18     |           | 1.7 | 0.42 | ng/L | 1   |     |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 1.7    |           | 1.7 | 0.42 | ng/L | 1   |     |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 11     |           | 1.7 | 0.42 | ng/L | 1   |     |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95924-1

**Client Sample ID: 52-2\_20220824**

**Lab Sample ID: 410-95924-1**

Date Collected: 08/24/22 11:05

Matrix: Water

Date Received: 08/26/22 10:28

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 2.7    |           | 1.7 | 0.42 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:20 | 1       |
| Perfluorooctanoic acid (PFOA)        | 18     |           | 1.7 | 0.42 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:20 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 1.7 | 0.42 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:20 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 1.7    |           | 1.7 | 0.42 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:20 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 11     |           | 1.7 | 0.42 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:20 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.7 | 0.42 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:20 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 105       |           | 31 - 182 | 09/06/22 09:44 | 09/09/22 18:20 | 1       |
| 13C8 PFOA        | 104       |           | 48 - 162 | 09/06/22 09:44 | 09/09/22 18:20 | 1       |
| 13C9 PFNA        | 100       |           | 51 - 167 | 09/06/22 09:44 | 09/09/22 18:20 | 1       |
| 13C3 PFHxS       | 118       |           | 28 - 188 | 09/06/22 09:44 | 09/09/22 18:20 | 1       |
| 13C8 PFOS        | 108       |           | 51 - 159 | 09/06/22 09:44 | 09/09/22 18:20 | 1       |
| 13C6 PFDA        | 102       |           | 49 - 163 | 09/06/22 09:44 | 09/09/22 18:20 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95924-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID   | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|--------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                    | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-95924-1        | 52-2_20220824      | 105   | 104                | 100                | 118                | 108                | 102                |
| LCS 410-292937/2-A | Lab Control Sample | 96  | 96                 | 100                | 110                | 100                | 100                |
| MB 410-292937/1-A  | Method Blank       | 96  | 92                 | 97                 | 100                | 99                 | 98                 |

### Surrogate Legend

C4PFHA = 13C4 PFHpA  
 C8PFOA = 13C8 PFOA  
 C9PFNA = 13C9 PFNA  
 C3PFHS = 13C3 PFHxS  
 C8PFOS = 13C8 PFOS  
 C6PFDA = 13C6 PFDA





# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95924-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-292937/1-A**  
**Matrix: Water**  
**Analysis Batch: 294182**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 292937**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 96        |           | 31 - 182 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C8 PFOA        | 92        |           | 48 - 162 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C9 PFNA        | 97        |           | 51 - 167 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C3 PFHxS       | 100       |           | 28 - 188 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C8 PFOS        | 99        |           | 51 - 159 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C6 PFDA        | 98        |           | 49 - 163 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |

**Lab Sample ID: LCS 410-292937/2-A**  
**Matrix: Water**  
**Analysis Batch: 294182**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 292937**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 24.9       |               | ng/L |   | 97   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 27.0       |               | ng/L |   | 106  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 21.6       |               | ng/L |   | 93   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.4       |               | ng/L |   | 99   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 26.6       |               | ng/L |   | 104  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 96        |           | 31 - 182 |
| 13C8 PFOA        | 96        |           | 48 - 162 |
| 13C9 PFNA        | 100       |           | 51 - 167 |
| 13C3 PFHxS       | 110       |           | 28 - 188 |
| 13C8 PFOS        | 100       |           | 51 - 159 |
| 13C6 PFDA        | 100       |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95924-1

## LCMS

### Prep Batch: 292937

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95924-1        | 52-2_20220824      | Total/NA  | Water  | 537 IDA |            |
| MB 410-292937/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-292937/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 294182

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95924-1        | 52-2_20220824      | Total/NA  | Water  | 537 IDA | 292937     |
| MB 410-292937/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 292937     |
| LCS 410-292937/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 292937     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95924-1

**Client Sample ID: 52-2\_20220824**

**Lab Sample ID: 410-95924-1**

**Date Collected: 08/24/22 11:05**

**Matrix: Water**

**Date Received: 08/26/22 10:28**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 292937       | D5VP          | ELLE | 09/06/22 09:44       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 294182       | ZG8V          | ELLE | 09/09/22 18:20       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95924-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95924-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95924-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-95924-1   | 52-2_20220824    | Water  | 08/24/22 11:05 | 08/26/22 10:28 |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-95924-1

**Login Number: 95924**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: Renner, Melissa**

| Question   | Answer | Comment      |
|--|--------|--------------|
| The cooler's custody seal is intact.   | True   |              |
| The cooler or samples do not appear to have been compromised or tampered with.             | True   |              |
| Samples were received on ice.  | True   |              |
| Cooler Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen).        | True   |              |
| Cooler Temperature is recorded.  | True   |              |
| WV: Container Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen). | N/A    |              |
| WV: Container Temperature is recorded.   | N/A    |              |
| COC is present.  | True   |              |
| COC is filled out in ink and legible.  | True   |              |
| COC is filled out with all pertinent information.  | True   |              |
| There are no discrepancies between the containers received and the COC.                    | True   |              |
| Sample containers have legible labels.   | True   |              |
| Containers are not broken or leaking.  | True   |              |
| Sample collection date/times are provided.   | True   |              |
| Appropriate sample containers are used.  | True   |              |
| Sample bottles are completely filled.  | True   |              |
| There is sufficient vol. for all requested analyses.                                       | True   |              |
| Is the Field Sampler's name present on COC?  | True   |              |
| Sample custody seals are intact.   | N/A    | Not present. |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?                | N/A    |              |



 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 1/9/2023 9:10:01 PM

**JOB DESCRIPTION**

N Monmouth PFAS

**JOB NUMBER**

410-110021-1

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
1/9/2023 9:10:01 PM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 10 |
| QC Sample Results . . . . .        | 11 |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 16 |
| Sample Summary . . . . .           | 17 |
| Chain of Custody . . . . .         | 18 |
| Receipt Checklists . . . . .       | 19 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

---

**Job ID: 410-110021-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative  
410-110021-1**

**Receipt**

The samples were received on 12/21/2022 11:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.6°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

## Client Sample ID: 52-3\_POET\_PRE\_20221220

Lab Sample ID: 410-110021-1

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 6.2    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 38     |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 2.8    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 21     |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-3\_POET\_MID\_20221220

Lab Sample ID: 410-110021-2

| Analyte                             | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 2.0    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-3\_POET\_POST\_20221220

Lab Sample ID: 410-110021-3

| Analyte                             | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 21     |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

**Client Sample ID: 52-3\_POET\_PRE\_20221220**

**Lab Sample ID: 410-110021-1**

Date Collected: 12/20/22 10:30

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 6.2       |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| Perfluorooctanoic acid (PFOA)        | 38        |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 2.8       |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 21        |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 109       |           | 31 - 182 |     |      |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| 13C8 PFOA                            | 102       |           | 48 - 162 |     |      |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| 13C9 PFNA                            | 105       |           | 51 - 167 |     |      |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| 13C3 PFHxS                           | 115       |           | 28 - 188 |     |      |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| 13C8 PFOS                            | 112       |           | 51 - 159 |     |      |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| 13C6 PFDA                            | 108       |           | 49 - 163 |     |      |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |

**Client Sample ID: 52-3\_POET\_MID\_20221220**

**Lab Sample ID: 410-110021-2**

Date Collected: 12/20/22 10:32

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 2.0       |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 111       |           | 31 - 182 |     |      |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| 13C8 PFOA                            | 97        |           | 48 - 162 |     |      |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| 13C9 PFNA                            | 119       |           | 51 - 167 |     |      |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| 13C3 PFHxS                           | 106       |           | 28 - 188 |     |      |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| 13C8 PFOS                            | 115       |           | 51 - 159 |     |      |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| 13C6 PFDA                            | 100       |           | 49 - 163 |     |      |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |

**Client Sample ID: 52-3\_POET\_POST\_20221220**

**Lab Sample ID: 410-110021-3**

Date Collected: 12/20/22 10:35

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.6   |           | 1.6 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:26 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.6   |           | 1.6 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:26 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.6   |           | 1.6 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:26 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.6   |           | 1.6 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:26 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 21     |           | 1.6 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:26 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.6   |           | 1.6 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:26 | 1       |



# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

**Client Sample ID: 52-3\_POET\_POST\_20221220**

**Lab Sample ID: 410-110021-3**

**Date Collected: 12/20/22 10:35**

**Matrix: Water**

**Date Received: 12/21/22 11:40**

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C4 PFHpA              | 99               |                  | 31 - 182      | 01/03/23 17:22  | 01/06/23 23:26  | 1              |
| 13C8 PFOA               | 95               |                  | 48 - 162      | 01/03/23 17:22  | 01/06/23 23:26  | 1              |
| 13C9 PFNA               | 108              |                  | 51 - 167      | 01/03/23 17:22  | 01/06/23 23:26  | 1              |
| 13C3 PFHxS              | 98               |                  | 28 - 188      | 01/03/23 17:22  | 01/06/23 23:26  | 1              |
| 13C8 PFOS               | 107              |                  | 51 - 159      | 01/03/23 17:22  | 01/06/23 23:26  | 1              |
| 13C6 PFDA               | 99               |                  | 49 - 163      | 01/03/23 17:22  | 01/06/23 23:26  | 1              |



# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID        | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|-------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                         | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-110021-1       | 52-3_POET_PRE_20221220  | 109   | 102                | 105                | 115                | 112                | 108                |
| 410-110021-2       | 52-3_POET_MID_20221220  | 111   | 97                 | 119                | 106                | 115                | 100                |
| 410-110021-3       | 52-3_POET_POST_20221220 | 99  | 95                 | 108                | 98                 | 107                | 99                 |
| LCS 410-332220/2-A | Lab Control Sample      | 108   | 102                | 112                | 104                | 112                | 95                 |
| LCS 410-332220/3-A | Lab Control Sample Dup  | 101   | 97                 | 107                | 105                | 110                | 99                 |
| MB 410-332220/1-A  | Method Blank            | 110   | 105                | 111                | 115                | 112                | 101                |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-332220/1-A**  
**Matrix: Water**  
**Analysis Batch: 333356**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 332220**

| Analyte                              | MB     | MB        | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |     |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 110       |           | 31 - 182 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C8 PFOA        | 105       |           | 48 - 162 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C9 PFNA        | 111       |           | 51 - 167 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C3 PFHxS       | 115       |           | 28 - 188 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C8 PFOS        | 112       |           | 51 - 159 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C6 PFDA        | 101       |           | 49 - 163 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |

**Lab Sample ID: LCS 410-332220/2-A**  
**Matrix: Water**  
**Analysis Batch: 333356**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 332220**

| Analyte                              | Spike Added | LCS    | LCS       | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|
|                                      |             | Result | Qualifier |      |   |      |             |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 24.9   |           | ng/L |   | 97   | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 25.7   |           | ng/L |   | 100  | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 28.2   |           | ng/L |   | 110  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 23.0   |           | ng/L |   | 99   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.9   |           | ng/L |   | 101  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 26.4   |           | ng/L |   | 103  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 108       |           | 31 - 182 |
| 13C8 PFOA        | 102       |           | 48 - 162 |
| 13C9 PFNA        | 112       |           | 51 - 167 |
| 13C3 PFHxS       | 104       |           | 28 - 188 |
| 13C8 PFOS        | 112       |           | 51 - 159 |
| 13C6 PFDA        | 95        |           | 49 - 163 |

**Lab Sample ID: LCSD 410-332220/3-A**  
**Matrix: Water**  
**Analysis Batch: 333356**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 332220**

| Analyte                              | Spike Added | LCSD   | LCSD      | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|-----|-----------|
|                                      |             | Result | Qualifier |      |   |      |             |     |           |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 26.2   |           | ng/L |   | 102  | 59 - 145    | 5   | 30        |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 26.7   |           | ng/L |   | 104  | 51 - 145    | 4   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 27.0   |           | ng/L |   | 105  | 61 - 139    | 4   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 21.6   |           | ng/L |   | 93   | 58 - 134    | 6   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.1   |           | ng/L |   | 98   | 45 - 150    | 3   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 27.0   |           | ng/L |   | 105  | 56 - 138    | 2   | 30        |

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 101              |                  | 31 - 182      |
| 13C8 PFOA               | 97               |                  | 48 - 162      |
| 13C9 PFNA               | 107              |                  | 51 - 167      |
| 13C3 PFHxS              | 105              |                  | 28 - 188      |
| 13C8 PFOS               | 110              |                  | 51 - 159      |
| 13C6 PFDA               | 99               |                  | 49 - 163      |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

## LCMS

### Prep Batch: 332220

| Lab Sample ID       | Client Sample ID        | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|-------------------------|-----------|--------|---------|------------|
| 410-110021-1        | 52-3_POET_PRE_20221220  | Total/NA  | Water  | 537 IDA |            |
| 410-110021-2        | 52-3_POET_MID_20221220  | Total/NA  | Water  | 537 IDA |            |
| 410-110021-3        | 52-3_POET_POST_20221220 | Total/NA  | Water  | 537 IDA |            |
| MB 410-332220/1-A   | Method Blank            | Total/NA  | Water  | 537 IDA |            |
| LCS 410-332220/2-A  | Lab Control Sample      | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-332220/3-A | Lab Control Sample Dup  | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 333356

| Lab Sample ID       | Client Sample ID        | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|-------------------------|-----------|--------|---------|------------|
| 410-110021-1        | 52-3_POET_PRE_20221220  | Total/NA  | Water  | 537 IDA | 332220     |
| 410-110021-2        | 52-3_POET_MID_20221220  | Total/NA  | Water  | 537 IDA | 332220     |
| 410-110021-3        | 52-3_POET_POST_20221220 | Total/NA  | Water  | 537 IDA | 332220     |
| MB 410-332220/1-A   | Method Blank            | Total/NA  | Water  | 537 IDA | 332220     |
| LCS 410-332220/2-A  | Lab Control Sample      | Total/NA  | Water  | 537 IDA | 332220     |
| LCSD 410-332220/3-A | Lab Control Sample Dup  | Total/NA  | Water  | 537 IDA | 332220     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

**Client Sample ID: 52-3\_POET\_PRE\_20221220**

**Lab Sample ID: 410-110021-1**

Date Collected: 12/20/22 10:30

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR          | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D          | ELLE | 01/06/23 23:04       |

**Client Sample ID: 52-3\_POET\_MID\_20221220**

**Lab Sample ID: 410-110021-2**

Date Collected: 12/20/22 10:32

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR          | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D          | ELLE | 01/06/23 23:15       |

**Client Sample ID: 52-3\_POET\_POST\_20221220**

**Lab Sample ID: 410-110021-3**

Date Collected: 12/20/22 10:35

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR          | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D          | ELLE | 01/06/23 23:26       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300





# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

---

| Lab Sample ID | Client Sample ID        | Matrix | Collected      | Received       |
|---------------|-------------------------|--------|----------------|----------------|
| 410-110021-1  | 52-3_POET_PRE_20221220  | Water  | 12/20/22 10:30 | 12/21/22 11:40 |
| 410-110021-2  | 52-3_POET_MID_20221220  | Water  | 12/20/22 10:32 | 12/21/22 11:40 |
| 410-110021-3  | 52-3_POET_POST_20221220 | Water  | 12/20/22 10:35 | 12/21/22 11:40 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-110021-1

Login Number: 110021

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: McBeth, Jessica

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-95926-1

Client Project/Site: N. Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



*Authorized for release by:*  
9/12/2022 8:34:08 AM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer".

---

Kelly Bauer  
Project Manager  
9/12/2022 8:34:08 AM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 10 |
| Lab Chronicle . . . . .            | 11 |
| Certification Summary . . . . .    | 12 |
| Method Summary . . . . .           | 13 |
| Sample Summary . . . . .           | 14 |
| Chain of Custody . . . . .         | 15 |
| Receipt Checklists . . . . .       | 16 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95926-1

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95926-1

---

**Job ID: 410-95926-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative**  
**410-95926-1**

**Receipt**

The sample was received on 8/26/2022 10:28 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.





# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95926-1

Client Sample ID: 52-4\_20220824

Lab Sample ID: 410-95926-1

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 5.7    |           | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 39     |           | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 2.8    |           | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 22     |           | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC



# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95926-1

**Client Sample ID: 52-4\_20220824**

**Lab Sample ID: 410-95926-1**

Date Collected: 08/24/22 11:45

Matrix: Water

Date Received: 08/26/22 10:28

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 5.7    |           | 1.6 | 0.40 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:43 | 1       |
| Perfluorooctanoic acid (PFOA)        | 39     |           | 1.6 | 0.40 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:43 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 1.6 | 0.40 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:43 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 2.8    |           | 1.6 | 0.40 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:43 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 22     |           | 1.6 | 0.40 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:43 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.6 | 0.40 | ng/L |   | 09/06/22 09:44 | 09/09/22 18:43 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 85        |           | 31 - 182 | 09/06/22 09:44 | 09/09/22 18:43 | 1       |
| 13C8 PFOA        | 81        |           | 48 - 162 | 09/06/22 09:44 | 09/09/22 18:43 | 1       |
| 13C9 PFNA        | 85        |           | 51 - 167 | 09/06/22 09:44 | 09/09/22 18:43 | 1       |
| 13C3 PFHxS       | 94        |           | 28 - 188 | 09/06/22 09:44 | 09/09/22 18:43 | 1       |
| 13C8 PFOS        | 80        |           | 51 - 159 | 09/06/22 09:44 | 09/09/22 18:43 | 1       |
| 13C6 PFDA        | 78        |           | 49 - 163 | 09/06/22 09:44 | 09/09/22 18:43 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95926-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID   | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|--------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                    | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-95926-1        | 52-4_20220824      | 85  | 81                 | 85                 | 94                 | 80                 | 78                 |
| LCS 410-292937/2-A | Lab Control Sample | 96  | 96                 | 100                | 110                | 100                | 100                |
| MB 410-292937/1-A  | Method Blank       | 96  | 92                 | 97                 | 100                | 99                 | 98                 |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95926-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-292937/1-A**  
**Matrix: Water**  
**Analysis Batch: 294182**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 292937**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 09:44 | 09/09/22 15:34 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 96        |           | 31 - 182 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C8 PFOA        | 92        |           | 48 - 162 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C9 PFNA        | 97        |           | 51 - 167 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C3 PFHxS       | 100       |           | 28 - 188 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C8 PFOS        | 99        |           | 51 - 159 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |
| 13C6 PFDA        | 98        |           | 49 - 163 | 09/06/22 09:44 | 09/09/22 15:34 | 1       |

**Lab Sample ID: LCS 410-292937/2-A**  
**Matrix: Water**  
**Analysis Batch: 294182**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 292937**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 24.9       |               | ng/L |   | 97   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 27.0       |               | ng/L |   | 106  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 21.6       |               | ng/L |   | 93   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.4       |               | ng/L |   | 99   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 26.6       |               | ng/L |   | 104  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 96        |           | 31 - 182 |
| 13C8 PFOA        | 96        |           | 48 - 162 |
| 13C9 PFNA        | 100       |           | 51 - 167 |
| 13C3 PFHxS       | 110       |           | 28 - 188 |
| 13C8 PFOS        | 100       |           | 51 - 159 |
| 13C6 PFDA        | 100       |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95926-1

## LCMS

### Prep Batch: 292937

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95926-1        | 52-4_20220824      | Total/NA  | Water  | 537 IDA |            |
| MB 410-292937/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-292937/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 294182

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95926-1        | 52-4_20220824      | Total/NA  | Water  | 537 IDA | 292937     |
| MB 410-292937/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 292937     |
| LCS 410-292937/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 292937     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95926-1

**Client Sample ID: 52-4\_20220824**

**Lab Sample ID: 410-95926-1**

**Date Collected: 08/24/22 11:45**

**Matrix: Water**

**Date Received: 08/26/22 10:28**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 292937       | D5VP          | ELLE | 09/06/22 09:44       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 294182       | ZG8V          | ELLE | 09/09/22 18:43       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95926-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95926-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300





# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95926-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-95926-1   | 52-4_20220824    | Water  | 08/24/22 11:45 | 08/26/22 10:28 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-95926-1

**Login Number: 95926**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: Renner, Melissa**

| Question   | Answer | Comment      |
|--|--------|--------------|
| The cooler's custody seal is intact.   | True   |              |
| The cooler or samples do not appear to have been compromised or tampered with.             | True   |              |
| Samples were received on ice.  | True   |              |
| Cooler Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen).        | True   |              |
| Cooler Temperature is recorded.  | True   |              |
| WV: Container Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen). | N/A    |              |
| WV: Container Temperature is recorded.   | N/A    |              |
| COC is present.  | True   |              |
| COC is filled out in ink and legible.  | True   |              |
| COC is filled out with all pertinent information.  | True   |              |
| There are no discrepancies between the containers received and the COC.                    | True   |              |
| Sample containers have legible labels.   | True   |              |
| Containers are not broken or leaking.  | True   |              |
| Sample collection date/times are provided.   | True   |              |
| Appropriate sample containers are used.  | True   |              |
| Sample bottles are completely filled.  | True   |              |
| There is sufficient vol. for all requested analyses.                                       | True   |              |
| Is the Field Sampler's name present on COC?  | True   |              |
| Sample custody seals are intact.   | N/A    | Not present. |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?                | N/A    |              |

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-98351-1

Client Project/Site: N Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



Authorized for release by:

10/5/2022 2:47:31 AM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer".

---

Kelly Bauer  
Project Manager  
10/5/2022 2:47:31 AM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 11 |
| Lab Chronicle . . . . .            | 12 |
| Certification Summary . . . . .    | 13 |
| Method Summary . . . . .           | 14 |
| Sample Summary . . . . .           | 15 |
| Chain of Custody . . . . .         | 16 |
| Receipt Checklists . . . . .       | 17 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98351-1

### Qualifiers

#### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98351-1

---

**Job ID: 410-98351-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

---

**Narrative**

**Job Narrative**  
**410-98351-1**

**Receipt**

The samples were received on 9/17/2022 10:24 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.1°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98351-1

**Client Sample ID: 52-5\_20220915**

**Lab Sample ID: 410-98351-1**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 1.3    | J         | 1.7 | 0.43 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 5.4    |           | 1.7 | 0.43 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 0.68   | J         | 1.7 | 0.43 | ng/L | 1       |   | 537 IDA | Total/NA  |

**Client Sample ID: FB-01\_20220915**

**Lab Sample ID: 410-98351-2**

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC



# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98351-1

**Client Sample ID: 52-5\_20220915**

**Lab Sample ID: 410-98351-1**

Date Collected: 09/15/22 14:45

Matrix: Water

Date Received: 09/17/22 10:24

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 1.3    | J         | 1.7 | 0.43 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:06 | 1       |
| Perfluorooctanoic acid (PFOA)        | 5.4    |           | 1.7 | 0.43 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:06 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 1.7 | 0.43 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:06 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 0.68   | J         | 1.7 | 0.43 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:06 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 1.7 | 0.85 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:06 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.7 | 0.43 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:06 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 95        |           | 31 - 182 | 09/27/22 11:37 | 10/01/22 05:06 | 1       |
| 13C8 PFOA        | 87        |           | 48 - 162 | 09/27/22 11:37 | 10/01/22 05:06 | 1       |
| 13C9 PFNA        | 93        |           | 51 - 167 | 09/27/22 11:37 | 10/01/22 05:06 | 1       |
| 13C3 PFHxS       | 86        |           | 28 - 188 | 09/27/22 11:37 | 10/01/22 05:06 | 1       |
| 13C8 PFOS        | 83        |           | 51 - 159 | 09/27/22 11:37 | 10/01/22 05:06 | 1       |
| 13C6 PFDA        | 75        |           | 49 - 163 | 09/27/22 11:37 | 10/01/22 05:06 | 1       |

**Client Sample ID: FB-01\_20220915**

**Lab Sample ID: 410-98351-2**

Date Collected: 09/15/22 14:42

Matrix: Water

Date Received: 09/17/22 10:24

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 1.6 | 0.41 | ng/L |   | 09/26/22 17:42 | 09/28/22 02:20 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 1.6 | 0.41 | ng/L |   | 09/26/22 17:42 | 09/28/22 02:20 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 1.6 | 0.41 | ng/L |   | 09/26/22 17:42 | 09/28/22 02:20 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 1.6 | 0.41 | ng/L |   | 09/26/22 17:42 | 09/28/22 02:20 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 1.6 | 0.81 | ng/L |   | 09/26/22 17:42 | 09/28/22 02:20 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.6 | 0.41 | ng/L |   | 09/26/22 17:42 | 09/28/22 02:20 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 103       |           | 31 - 182 | 09/26/22 17:42 | 09/28/22 02:20 | 1       |
| 13C8 PFOA        | 102       |           | 48 - 162 | 09/26/22 17:42 | 09/28/22 02:20 | 1       |
| 13C9 PFNA        | 110       |           | 51 - 167 | 09/26/22 17:42 | 09/28/22 02:20 | 1       |
| 13C3 PFHxS       | 104       |           | 28 - 188 | 09/26/22 17:42 | 09/28/22 02:20 | 1       |
| 13C8 PFOS        | 100       |           | 51 - 159 | 09/26/22 17:42 | 09/28/22 02:20 | 1       |
| 13C6 PFDA        | 97        |           | 49 - 163 | 09/26/22 17:42 | 09/28/22 02:20 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98351-1

**Method: 537 IDA - EPA 537 Isotope Dilution**

**Matrix: Water**

**Prep Type: Total/NA**

| Lab Sample ID      | Client Sample ID       | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                        | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-98351-1        | 52-5_20220915          | 95  | 87                 | 93                 | 86                 | 83                 | 75                 |
| 410-98351-2        | FB-01_20220915         | 103   | 102                | 110                | 104                | 100                | 97                 |
| LCS 410-299959/2-A | Lab Control Sample     | 105   | 103                | 113                | 105                | 108                | 96                 |
| LCS 410-300284/2-A | Lab Control Sample     | 99  | 97                 | 115                | 95                 | 115                | 99                 |
| LCS 410-300284/3-A | Lab Control Sample Dup | 101   | 101                | 109                | 104                | 113                | 105                |
| MB 410-299959/1-A  | Method Blank           | 96  | 93                 | 107                | 96                 | 102                | 92                 |
| MB 410-300284/1-A  | Method Blank           | 99  | 97                 | 113                | 100                | 107                | 100                |

**Surrogate Legend**

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98351-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-299959/1-A**  
**Matrix: Water**  
**Analysis Batch: 300157**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 299959**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 1.0  | ng/L |   | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/26/22 17:42 | 09/28/22 00:51 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 96        |           | 31 - 182 | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| 13C8 PFOA        | 93        |           | 48 - 162 | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| 13C9 PFNA        | 107       |           | 51 - 167 | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| 13C3 PFHxS       | 96        |           | 28 - 188 | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| 13C8 PFOS        | 102       |           | 51 - 159 | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| 13C6 PFDA        | 92        |           | 49 - 163 | 09/26/22 17:42 | 09/28/22 00:51 | 1       |

**Lab Sample ID: LCS 410-299959/2-A**  
**Matrix: Water**  
**Analysis Batch: 300157**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 299959**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 30.0       |               | ng/L |   | 117  | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 29.7       |               | ng/L |   | 116  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 27.1       |               | ng/L |   | 116  | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 26.8       |               | ng/L |   | 113  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 30.8       |               | ng/L |   | 120  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 105       |           | 31 - 182 |
| 13C8 PFOA        | 103       |           | 48 - 162 |
| 13C9 PFNA        | 113       |           | 51 - 167 |
| 13C3 PFHxS       | 105       |           | 28 - 188 |
| 13C8 PFOS        | 108       |           | 51 - 159 |
| 13C6 PFDA        | 96        |           | 49 - 163 |

**Lab Sample ID: MB 410-300284/1-A**  
**Matrix: Water**  
**Analysis Batch: 301853**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 300284**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 1.0  | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |

# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98351-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| Isotope Dilution | MB MB     |           | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 99        |           | 31 - 182 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C8 PFOA        | 97        |           | 48 - 162 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C9 PFNA        | 113       |           | 51 - 167 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C3 PFHxS       | 100       |           | 28 - 188 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C8 PFOS        | 107       |           | 51 - 159 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C6 PFDA        | 100       |           | 49 - 163 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |

Lab Sample ID: LCS 410-300284/2-A

Matrix: Water

Analysis Batch: 301853

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 300284

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 22.0       |               | ng/L |   | 86   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 21.4       |               | ng/L |   | 83   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 20.1       |               | ng/L |   | 86   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 19.7       |               | ng/L |   | 83   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 22.7       |               | ng/L |   | 89   | 56 - 138    |

| Isotope Dilution | LCS LCS   |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 99        |           | 31 - 182 |
| 13C8 PFOA        | 97        |           | 48 - 162 |
| 13C9 PFNA        | 115       |           | 51 - 167 |
| 13C3 PFHxS       | 95        |           | 28 - 188 |
| 13C8 PFOS        | 115       |           | 51 - 159 |
| 13C6 PFDA        | 99        |           | 49 - 163 |

Lab Sample ID: LCSD 410-300284/3-A

Matrix: Water

Analysis Batch: 301853

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 300284

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-----------|
|                                      |             |             |                |      |   |      |             |     |           |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 22.5        |                | ng/L |   | 88   | 51 - 145    | 2   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 21.6        |                | ng/L |   | 85   | 61 - 139    | 1   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.8        |                | ng/L |   | 85   | 58 - 134    | 2   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 20.0        |                | ng/L |   | 84   | 45 - 150    | 2   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 23.0        |                | ng/L |   | 90   | 56 - 138    | 1   | 30        |

| Isotope Dilution | LCSD LCSD |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 101       |           | 31 - 182 |
| 13C8 PFOA        | 101       |           | 48 - 162 |
| 13C9 PFNA        | 109       |           | 51 - 167 |
| 13C3 PFHxS       | 104       |           | 28 - 188 |
| 13C8 PFOS        | 113       |           | 51 - 159 |
| 13C6 PFDA        | 105       |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98351-1

## LCMS

### Prep Batch: 299959

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-98351-2        | FB-01_20220915     | Total/NA  | Water  | 537 IDA |            |
| MB 410-299959/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-299959/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 300157

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-98351-2        | FB-01_20220915     | Total/NA  | Water  | 537 IDA | 299959     |
| MB 410-299959/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 299959     |
| LCS 410-299959/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 299959     |

### Prep Batch: 300284

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-98351-1         | 52-5_20220915          | Total/NA  | Water  | 537 IDA |            |
| MB 410-300284/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-300284/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-300284/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 301853

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-98351-1         | 52-5_20220915          | Total/NA  | Water  | 537 IDA | 300284     |
| MB 410-300284/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 300284     |
| LCS 410-300284/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 300284     |
| LCSD 410-300284/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 300284     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98351-1

**Client Sample ID: 52-5\_20220915**

**Lab Sample ID: 410-98351-1**

Date Collected: 09/15/22 14:45

Matrix: Water

Date Received: 09/17/22 10:24

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 300284       | D5VP          | ELLE | 09/27/22 11:37       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 301853       | QD9Y          | ELLE | 10/01/22 05:06       |

**Client Sample ID: FB-01\_20220915**

**Lab Sample ID: 410-98351-2**

Date Collected: 09/15/22 14:42

Matrix: Water

Date Received: 09/17/22 10:24

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 299959       | GMZ5          | ELLE | 09/26/22 17:42       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 300157       | ZG8V          | ELLE | 09/28/22 02:20       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98351-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |



# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98351-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98351-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-98351-1   | 52-5_20220915    | Water  | 09/15/22 14:45 | 09/17/22 10:24 |
| 410-98351-2   | FB-01_20220915   | Water  | 09/15/22 14:42 | 09/17/22 10:24 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-98351-1

**Login Number: 98351**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: McBeth, Jessica**

| Question   | Answer | Comment      |
|--|--------|--------------|
| The cooler's custody seal is intact.   | True   |              |
| The cooler or samples do not appear to have been compromised or tampered with. | True   |              |
| Samples were received on ice.  | True   |              |
| Cooler Temperature is acceptable (</=6C, not frozen).                          | True   |              |
| Cooler Temperature is recorded.  | True   |              |
| WV: Container Temperature is acceptable (</=6C, not frozen).                   | N/A    |              |
| WV: Container Temperature is recorded.   | N/A    |              |
| COC is present.  | True   |              |
| COC is filled out in ink and legible.  | True   |              |
| COC is filled out with all pertinent information.                              | True   |              |
| There are no discrepancies between the containers received and the COC.        | True   |              |
| Sample containers have legible labels.   | True   |              |
| Containers are not broken or leaking.  | True   |              |
| Sample collection date/times are provided.                                     | True   |              |
| Appropriate sample containers are used.  | True   |              |
| Sample bottles are completely filled.  | True   |              |
| There is sufficient vol. for all requested analyses.                           | True   |              |
| Is the Field Sampler's name present on COC?                                    | True   |              |
| Sample custody seals are intact.   | N/A    | Not present. |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?    | N/A    |              |



## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-95922-1  
Laboratory Sample Delivery Group: 5197.01  
Client Project/Site: N. Monmouth PFAS 5197.01

For:  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



Authorized for release by:  
9/26/2022 6:07:57 AM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

---

Kelly Bauer  
Project Manager  
9/26/2022 6:07:57 AM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 10 |
| Lab Chronicle . . . . .            | 11 |
| Certification Summary . . . . .    | 12 |
| Method Summary . . . . .           | 13 |
| Sample Summary . . . . .           | 14 |
| Chain of Custody . . . . .         | 15 |
| Receipt Checklists . . . . .       | 16 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95922-1  
SDG: 5197.01

### Qualifiers

#### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| cn        | Refer to Case Narrative for further detail   |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |



# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95922-1  
SDG: 5197.01

**Job ID: 410-95922-1**

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

## Narrative

**Job Narrative**  
**410-95922-1**

### Receipt

The sample was received on 8/26/2022 10:28 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C

### Receipt Exceptions

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): 52-9\_20220825 (410-95922-1). The container labels list a time of 11:42, while the COC lists 11:40. The client COC was followed.

### PFAS

Method PFC\_IDA: Target analyte(s) Perfluoroheptanoic acid (PFHpA), Perfluorooctanoic acid (PFOA), Perfluorononanoic acid (PFNA), Perfluorohexanesulfonic acid (PFHxS), Perfluorooctanesulfonic acid (PFOS) and Perfluorodecanoic acid (PFDA) were detected in the method blank associated with the following sample: 52-9\_20220825 (410-95922-1). The following action was taken: This sample(s) was re-extracted outside the required holding time and target analyte(s) were not detected in the re-extracted method blank.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95922-1  
SDG: 5197.01

**Client Sample ID: 52-9\_20220825**

**Lab Sample ID: 410-95922-1**

No Detections.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95922-1  
 SDG: 5197.01

**Client Sample ID: 52-9\_20220825**

**Lab Sample ID: 410-95922-1**

Date Collected: 08/25/22 11:40

Matrix: Water

Date Received: 08/26/22 10:28

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND     | cn        | 1.6 | 0.41 | ng/L |   | 09/06/22 16:03 | 09/09/22 22:13 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     | cn        | 1.6 | 0.41 | ng/L |   | 09/06/22 16:03 | 09/09/22 22:13 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     | cn        | 1.6 | 0.41 | ng/L |   | 09/06/22 16:03 | 09/09/22 22:13 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     | cn        | 1.6 | 0.41 | ng/L |   | 09/06/22 16:03 | 09/09/22 22:13 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     | cn        | 1.6 | 0.41 | ng/L |   | 09/06/22 16:03 | 09/09/22 22:13 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     | cn        | 1.6 | 0.41 | ng/L |   | 09/06/22 16:03 | 09/09/22 22:13 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 113       |           | 31 - 182 | 09/06/22 16:03 | 09/09/22 22:13 | 1       |
| 13C8 PFOA        | 114       |           | 48 - 162 | 09/06/22 16:03 | 09/09/22 22:13 | 1       |
| 13C9 PFNA        | 111       |           | 51 - 167 | 09/06/22 16:03 | 09/09/22 22:13 | 1       |
| 13C3 PFHxS       | 119       |           | 28 - 188 | 09/06/22 16:03 | 09/09/22 22:13 | 1       |
| 13C8 PFOS        | 113       |           | 51 - 159 | 09/06/22 16:03 | 09/09/22 22:13 | 1       |
| 13C6 PFDA        | 115       |           | 49 - 163 | 09/06/22 16:03 | 09/09/22 22:13 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95922-1  
SDG: 5197.01

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID      | Client Sample ID   | C4PFHA<br>(31-182) | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 410-95922-1        | 52-9_20220825      | 113                | 114                | 111                | 119                | 113                | 115                |
| LCS 410-293086/2-A | Lab Control Sample | 120                | 119                | 120                | 134                | 117                | 110                |
| MB 410-293086/1-A  | Method Blank       | 98                 | 100                | 103                | 101                | 100                | 99                 |

### Surrogate Legend

C4PFHA = 13C4 PFHpA  
C8PFOA = 13C8 PFOA  
C9PFNA = 13C9 PFNA  
C3PFHS = 13C3 PFHxS  
C8PFOS = 13C8 PFOS  
C6PFDA = 13C6 PFDA

# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95922-1  
 SDG: 5197.01

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-293086/1-A**  
**Matrix: Water**  
**Analysis Batch: 294182**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 293086**

| Analyte                              | MB MB  |           | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | 1.07   | J         | 2.0 | 0.50 | ng/L |   | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| Perfluorooctanoic acid (PFOA)        | 1.14   | J         | 2.0 | 0.50 | ng/L |   | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| Perfluorononanoic acid (PFNA)        | 1.10   | J         | 2.0 | 0.50 | ng/L |   | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 0.940  | J         | 2.0 | 0.50 | ng/L |   | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 1.14   | J         | 2.0 | 0.50 | ng/L |   | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| Perfluorodecanoic acid (PFDA)        | 1.09   | J         | 2.0 | 0.50 | ng/L |   | 09/06/22 16:03 | 09/09/22 20:22 | 1       |

| Isotope Dilution | MB MB     |           | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 98        |           | 31 - 182 | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| 13C8 PFOA        | 100       |           | 48 - 162 | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| 13C9 PFNA        | 103       |           | 51 - 167 | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| 13C3 PFHxS       | 101       |           | 28 - 188 | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| 13C8 PFOS        | 100       |           | 51 - 159 | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| 13C6 PFDA        | 99        |           | 49 - 163 | 09/06/22 16:03 | 09/09/22 20:22 | 1       |

**Lab Sample ID: LCS 410-293086/2-A**  
**Matrix: Water**  
**Analysis Batch: 294182**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 293086**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 24.4       |               | ng/L |   | 95   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 25.6       |               | ng/L |   | 100  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 20.0       |               | ng/L |   | 86   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.0       |               | ng/L |   | 97   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 25.7       |               | ng/L |   | 101  | 56 - 138    |

| Isotope Dilution | LCS LCS   |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 120       |           | 31 - 182 |
| 13C8 PFOA        | 119       |           | 48 - 162 |
| 13C9 PFNA        | 120       |           | 51 - 167 |
| 13C3 PFHxS       | 134       |           | 28 - 188 |
| 13C8 PFOS        | 117       |           | 51 - 159 |
| 13C6 PFDA        | 110       |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95922-1  
SDG: 5197.01

## LCMS

### Prep Batch: 293086

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95922-1        | 52-9_20220825      | Total/NA  | Water  | 537 IDA |            |
| MB 410-293086/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-293086/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 294182

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95922-1        | 52-9_20220825      | Total/NA  | Water  | 537 IDA | 293086     |
| MB 410-293086/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 293086     |
| LCS 410-293086/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 293086     |

### Prep Batch: 297630

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95922-1 - RE   | 52-9_20220825      | Total/NA  | Water  | 537 IDA |            |
| MB 410-297630/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-297630/3-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 298701

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95922-1 - RE   | 52-9_20220825      | Total/NA  | Water  | 537 IDA | 297630     |
| MB 410-297630/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 297630     |
| LCS 410-297630/3-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 297630     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95922-1  
SDG: 5197.01

**Client Sample ID: 52-9\_20220825**

**Lab Sample ID: 410-95922-1**

**Date Collected: 08/25/22 11:40**

**Matrix: Water**

**Date Received: 08/26/22 10:28**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 293086       | GMZ5          | ELLE | 09/06/22 16:03       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 294182       | ZG8V          | ELLE | 09/09/22 22:13       |
| Total/NA  | Prep       | 537 IDA      | RE  |                 | 297630       | RC3V          | ELLE | 09/20/22 07:36       |
| Total/NA  | Analysis   | 537 IDA      | RE  | 1               | 298701       | MT26          | ELLE | 09/23/22 07:46       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95922-1  
SDG: 5197.01

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |



# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95922-1  
SDG: 5197.01

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95922-1  
SDG: 5197.01

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-95922-1   | 52-9_20220825    | Water  | 08/25/22 11:40 | 08/26/22 10:28 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-95922-1

SDG Number: 5197.01

**Login Number: 95922**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: Renner, Melissa**

| Question   | Answer | Comment                             |
|--|--------|-------------------------------------|
| The cooler's custody seal is intact.   | True   |                                     |
| The cooler or samples do not appear to have been compromised or tampered with.             | True   |                                     |
| Samples were received on ice.  | True   |                                     |
| Cooler Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen).        | True   |                                     |
| Cooler Temperature is recorded.  | True   |                                     |
| WV: Container Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen). | True   |                                     |
| WV: Container Temperature is recorded.   | N/A    |                                     |
| COC is present.  | N/A    |                                     |
| COC is filled out in ink and legible.  | True   |                                     |
| COC is filled out with all pertinent information.  | True   |                                     |
| There are no discrepancies between the containers received and the COC.                    | False  | Refer to Job Narrative for details. |
| Sample containers have legible labels.   | True   |                                     |
| Containers are not broken or leaking.  | True   |                                     |
| Sample collection date/times are provided.   | True   |                                     |
| Appropriate sample containers are used.  | True   |                                     |
| Sample bottles are completely filled.  | True   |                                     |
| There is sufficient vol. for all requested analyses.                                       | True   |                                     |
| Is the Field Sampler's name present on COC?  | True   |                                     |
| Sample custody seals are intact.   | N/A    | Not present.                        |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?                | N/A    |                                     |

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-85998-4  
Client Project/Site: PFAS in Groundwater

For:  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



Authorized for release by:  
6/19/2022 9:20:09 PM

Kelly Bauer, Project Manager  
(717)556-7262  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Handwritten signature of Kelly Bauer in black ink.

---

Kelly Bauer  
Project Manager  
6/19/2022 9:20:09 PM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 10 |
| Lab Chronicle . . . . .            | 11 |
| Certification Summary . . . . .    | 12 |
| Method Summary . . . . .           | 13 |
| Sample Summary . . . . .           | 14 |
| Chain of Custody . . . . .         | 15 |
| Receipt Checklists . . . . .       | 16 |

# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-4

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| B         | Compound was found in the blank and sample.  |
| cn        | Refer to Case Narrative for further detail   |
| I         | Value is EMPC (estimated maximum possible concentration).  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| ▫              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |



# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-4

---

**Job ID: 410-85998-4**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

---

**Narrative**

**Job Narrative  
410-85998-4**

**Receipt**

The samples were received on 6/2/2022 10:23 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.5°C

**PFAS**

Method PFC\_IDA: Perfluorooctanesulfonic acid (PFOS) was detected in the method blank associated with the following sample: 52-10\_20220601 (410-85998-4). The following action was taken: This sample(s) was re-extracted within the required holding time and Perfluorooctanesulfonic acid (PFOS) were again detected in the re-extracted method blank.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-4

Client Sample ID: 52-10\_20220601

Lab Sample ID: 410-85998-4

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluorooctanoic acid (PFOA)       | 1.3    | J         | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS) | 0.53   | J B cn    | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: PFAS in Groundwater

Job ID: 410-85998-4

**Client Sample ID: 52-10\_20220601**

**Lab Sample ID: 410-85998-4**

Date Collected: 06/01/22 10:25

Matrix: Water

Date Received: 06/02/22 10:23

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                                    | Result      | Qualifier     | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|-------------|---------------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)            | ND          |               | 1.6 | 0.40 | ng/L |   | 06/11/22 01:39 | 06/13/22 16:41 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>       | <b>1.3</b>  | <b>J</b>      | 1.6 | 0.40 | ng/L |   | 06/11/22 01:39 | 06/13/22 16:41 | 1       |
| Perfluorononanoic acid (PFNA)              | ND          |               | 1.6 | 0.40 | ng/L |   | 06/11/22 01:39 | 06/13/22 16:41 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)       | ND          |               | 1.6 | 0.40 | ng/L |   | 06/11/22 01:39 | 06/13/22 16:41 | 1       |
| <b>Perfluorooctanesulfonic acid (PFOS)</b> | <b>0.53</b> | <b>J B cn</b> | 1.6 | 0.40 | ng/L |   | 06/11/22 01:39 | 06/13/22 16:41 | 1       |
| Perfluorodecanoic acid (PFDA)              | ND          |               | 1.6 | 0.40 | ng/L |   | 06/11/22 01:39 | 06/13/22 16:41 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 80        |           | 31 - 182 | 06/11/22 01:39 | 06/13/22 16:41 | 1       |
| 13C8 PFOA        | 83        |           | 48 - 162 | 06/11/22 01:39 | 06/13/22 16:41 | 1       |
| 13C9 PFNA        | 89        |           | 51 - 167 | 06/11/22 01:39 | 06/13/22 16:41 | 1       |
| 13C3 PFHxS       | 93        |           | 28 - 188 | 06/11/22 01:39 | 06/13/22 16:41 | 1       |
| 13C8 PFOS        | 92        |           | 51 - 159 | 06/11/22 01:39 | 06/13/22 16:41 | 1       |
| 13C6 PFDA        | 85        |           | 49 - 163 | 06/11/22 01:39 | 06/13/22 16:41 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-4

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID   | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|--------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                    | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-85998-4        | 52-10_20220601     | 80  | 83                 | 89                 | 93                 | 92                 | 85                 |
| LCS 410-264473/2-A | Lab Control Sample | 94  | 95                 | 101                | 99                 | 99                 | 100                |
| MB 410-264473/1-A  | Method Blank       | 88  | 90                 | 94                 | 94                 | 93                 | 90                 |

### Surrogate Legend

C4PFHA = 13C4 PFHpA  
C8PFOA = 13C8 PFOA  
C9PFNA = 13C9 PFNA  
C3PFHS = 13C3 PFHxS  
C8PFOS = 13C8 PFOS  
C6PFDA = 13C6 PFDA

# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: PFAS in Groundwater

Job ID: 410-85998-4

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-264473/1-A**  
**Matrix: Water**  
**Analysis Batch: 264736**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 264473**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | 0.911  | J I       | 2.0 | 0.50 | ng/L |   | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 0.527  | J         | 2.0 | 0.50 | ng/L |   | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/11/22 01:39 | 06/13/22 15:23 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 88        |           | 31 - 182 | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| 13C8 PFOA        | 90        |           | 48 - 162 | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| 13C9 PFNA        | 94        |           | 51 - 167 | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| 13C3 PFHxS       | 94        |           | 28 - 188 | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| 13C8 PFOS        | 93        |           | 51 - 159 | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| 13C6 PFDA        | 90        |           | 49 - 163 | 06/11/22 01:39 | 06/13/22 15:23 | 1       |

**Lab Sample ID: LCS 410-264473/2-A**  
**Matrix: Water**  
**Analysis Batch: 264736**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 264473**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 24.3       |               | ng/L |   | 95   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 22.6       |               | ng/L |   | 88   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 21.6       |               | ng/L |   | 92   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 22.4       |               | ng/L |   | 95   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 23.9       |               | ng/L |   | 93   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 94        |           | 31 - 182 |
| 13C8 PFOA        | 95        |           | 48 - 162 |
| 13C9 PFNA        | 101       |           | 51 - 167 |
| 13C3 PFHxS       | 99        |           | 28 - 188 |
| 13C8 PFOS        | 99        |           | 51 - 159 |
| 13C6 PFDA        | 100       |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: PFAS in Groundwater

Job ID: 410-85998-4

## LCMS

### Prep Batch: 264473

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-85998-4        | 52-10_20220601     | Total/NA  | Water  | 537 IDA |            |
| MB 410-264473/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-264473/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 264736

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-85998-4        | 52-10_20220601     | Total/NA  | Water  | 537 IDA | 264473     |
| MB 410-264473/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 264473     |
| LCS 410-264473/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 264473     |

### Prep Batch: 265235

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-85998-4 - RE   | 52-10_20220601     | Total/NA  | Water  | 537 IDA |            |
| MB 410-265235/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-265235/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 266251

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-85998-4 - RE   | 52-10_20220601     | Total/NA  | Water  | 537 IDA | 265235     |
| MB 410-265235/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 265235     |
| LCS 410-265235/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 265235     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-4

**Client Sample ID: 52-10\_20220601**

**Lab Sample ID: 410-85998-4**

**Date Collected: 06/01/22 10:25**

**Matrix: Water**

**Date Received: 06/02/22 10:23**

| <u>Prep Type</u> | <u>Batch Type</u> | <u>Batch Method</u> | <u>Run</u> | <u>Dilution Factor</u> | <u>Batch Number</u> | <u>Prepared or Analyzed</u> | <u>Analyst</u> | <u>Lab</u> |
|------------------|-------------------|---------------------|------------|------------------------|---------------------|-----------------------------|----------------|------------|
| Total/NA         | Prep              | 537 IDA             |            |                        | 264473              | 06/11/22 01:39              | ZWK6           | ELLE       |
| Total/NA         | Analysis          | 537 IDA             |            | 1                      | 264736              | 06/13/22 16:41              | ZG8V           | ELLE       |
| Total/NA         | Prep              | 537 IDA             | RE         |                        | 265235              | 06/14/22 09:01              | PMS9           | ELLE       |
| Total/NA         | Analysis          | 537 IDA             | RE         | 1                      | 266251              | 06/16/22 19:40              | QD9Y           | ELLE       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-4

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |





# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-4

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-4

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-85998-4   | 52-10_20220601   | Water  | 06/01/22 10:25 | 06/02/22 10:23 |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Chain of Custody Record



410-85998 Chain of Custody

|  |  |  |                           |   |                                     |  |                       |
|--|--|--|---------------------------|---|-------------------------------------|--|-----------------------|
| <b>Client Information</b>  |  | Sampler: <u>D. Kessler / C. Yigora</u>   |                           | Lab PM: Bauer, Kelly  |                                     | COC No: 410-57598-16397.1  |                       |
| Client Contact: Shana Whitney  |  | Phone: <u>603.312.4876</u>   |                           | E-Mail: Kelly.Bauer@eLeurofinsus.com                        |                                     | Page: Page 1 of 1  |                       |
| Company: Sanborn Head & Associates Inc   |  | PWSID:   |                           | Analysis Requested  |                                     | Job #: <u>5197.01</u>  |                       |
| Address: 20 Foundry Street   |  | Due Date Requested:  |                           | Field Filtered Sample (Yes or No)<br>PFC_IDA - UCMR3 & PFAS |                                     | Preservation Codes:<br>A - HCL M - Hexane<br>B - NaOH N - None<br>C - Zn Acetate O - AsNaO2<br>D - Nitric Acid P - Na2O4S<br>E - NaHSO4 R - Na2S2O3<br>F - MeOH S - H2SO4<br>G - Amchlor T - TSP Dodecahydrate<br>H - Ascorbic Acid U - Acetone<br>I - Ice V - MCAA<br>J - DI Water W - pH 4-5<br>K - EDTA Y - Trizma<br>L - EDA Z - other (specify) |                       |
| City: Concord  |  | TAT Requested (days):  |                           |   |                                     |  |                       |
| State, Zip: NH, 03301  |  | Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No   |                           |   |                                     |  |                       |
| Phone: <u>603-229-1900</u>   |  | PO #: Purchase Order Requested   |                           |   |                                     |  |                       |
| Email: SWhitney@sanbornhead.com  |  | WO #:  |                           |   |                                     |  |                       |
| Project Name: PFAS in Groundwater  |  | Project #: 41010916  |                           |   |                                     |  |                       |
| Site: <u>5197.01</u>   |  | SSOW#:   |                           |   |                                     |  |                       |
| <b>Sample Identification</b>   |  | Sample Date  | Sample Time               | Sample Type (C=comp, G=grab)                                | Matrix (Water, Solid, Tissue, A=As) | Special Instructions/Note:   |                       |
| <u>52-1-20220601</u>   |  | <u>6/1/22</u>  | <u>13:26</u>              | <u>G</u>  | <u>Water</u>                        |  |                       |
| <u>52-79-20220601</u>  |  |  | <u>11:55</u>              | <u>G</u>  | <u>Water</u>                        |  |                       |
| <u>52-45-20220601</u>  |  |  | <u>11:04</u>              | <u>G</u>  | <u>Water</u>                        |  |                       |
| <u>52-10-20220601</u>  |  |  | <u>10:25</u>              | <u>G</u>  | <u>Water</u>                        |  |                       |
| <u>40-18-20220601</u>  |  |  | <u>9:55</u>               | <u>G</u>  | <u>Water</u>                        |  |                       |
| <u>FB-01-20220601</u>  |  | <u>6/1/22</u>  | <u>12:00</u>              | <u>G</u>  | <u>Water</u>                        |  |                       |
|  |  |  |                           |   | <u>Water</u>                        |  |                       |
|  |  |  |                           |   | <u>Water</u>                        |  |                       |
|  |  |  |                           |   | <u>Water</u>                        |  |                       |
|  |  |  |                           |   | <u>Water</u>                        |  |                       |
|  |  |  |                           |   | <u>Water</u>                        |  |                       |
| <b>Possible Hazard Identification</b>  |  | <b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>  |                           |   |                                     |  |                       |
| <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological |  | <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months |                           |   |                                     |  |                       |
| Deliverable Requested: I, II, III, IV, Other (specify)   |  | Special Instructions/QC Requirements:  |                           |   |                                     |  |                       |
| Empty Kit Relinquished by:   |  | Date:  | Time:                     | Method of Shipment:   |                                     |  |                       |
| Relinquished by: <u>[Signature]</u>  |  | Date/Time: <u>5/25/22 13:30</u>  | Company: <u>EPINS SHA</u> | Received by: <u>[Signature]</u>                             |                                     | Date/Time: <u>5/31/22</u>  | Company: <u>SHA</u>   |
| Relinquished by: <u>[Signature]</u>  |  | Date/Time: <u>6/1/22 16:50</u>   | Company: <u>SHA</u>       | Received by: _____  |                                     | Date/Time: _____   | Company: _____        |
| Relinquished by: _____   |  | Date/Time: _____   | Company: _____            | Received by: <u>Melody</u>                                  |                                     | Date/Time: <u>6-2-22 10:23</u>   | Company: <u>ELLET</u> |
| Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No   |  | Custody Seal No.: <u>141112</u>  |                           | Cooler Temperature(s) °C and Other Remarks: <u>3.5</u>      |                                     |  |                       |

## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-85998-4

**Login Number: 85998**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: McCaskey, Jonathan**

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.             | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen).        | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen). | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.  | True   |         |
| There are no discrepancies between the containers received and the COC.                    | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                       | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |



## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-98353-1

Client Project/Site: N Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



*Authorized for release by:*

*10/5/2022 2:48:18 AM*

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

---

Kelly Bauer  
Project Manager  
10/5/2022 2:48:18 AM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 11 |
| Lab Chronicle . . . . .            | 12 |
| Certification Summary . . . . .    | 13 |
| Method Summary . . . . .           | 14 |
| Sample Summary . . . . .           | 15 |
| Chain of Custody . . . . .         | 16 |
| Receipt Checklists . . . . .       | 17 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98353-1

### Qualifiers

#### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| I         | Value is EMPC (estimated maximum possible concentration).  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |



# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98353-1

---

**Job ID: 410-98353-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

---

**Narrative**

**Job Narrative**  
**410-98353-1**

**Receipt**

The sample was received on 9/17/2022 10:24 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.1°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98353-1

Client Sample ID: 52-13\_20220915

Lab Sample ID: 410-98353-1

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluorooctanoic acid (PFOA)        | 3.9    |           | 1.6 | 0.41 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 0.88   | J         | 1.6 | 0.41 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 2.5    | I         | 1.6 | 0.82 | ng/L | 1       |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98353-1

**Client Sample ID: 52-13\_20220915**

**Lab Sample ID: 410-98353-1**

Date Collected: 09/15/22 11:02

Matrix: Water

Date Received: 09/17/22 10:24

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 1.6 | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:17 | 1       |
| Perfluorooctanoic acid (PFOA)        | 3.9    |           | 1.6 | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:17 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 1.6 | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:17 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 0.88   | J         | 1.6 | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:17 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 2.5    | I         | 1.6 | 0.82 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:17 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.6 | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:17 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 92        |           | 31 - 182 | 09/27/22 11:37 | 10/01/22 05:17 | 1       |
| 13C8 PFOA        | 93        |           | 48 - 162 | 09/27/22 11:37 | 10/01/22 05:17 | 1       |
| 13C9 PFNA        | 105       |           | 51 - 167 | 09/27/22 11:37 | 10/01/22 05:17 | 1       |
| 13C3 PFHxS       | 97        |           | 28 - 188 | 09/27/22 11:37 | 10/01/22 05:17 | 1       |
| 13C8 PFOS        | 101       |           | 51 - 159 | 09/27/22 11:37 | 10/01/22 05:17 | 1       |
| 13C6 PFDA        | 92        |           | 49 - 163 | 09/27/22 11:37 | 10/01/22 05:17 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98353-1

**Method: 537 IDA - EPA 537 Isotope Dilution**

**Matrix: Water**

**Prep Type: Total/NA**

| Lab Sample ID       | Client Sample ID       | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|---------------------|------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                     |                        | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-98353-1         | 52-13_20220915         | 92  | 93                 | 105                | 97                 | 101                | 92                 |
| LCS 410-300284/2-A  | Lab Control Sample     | 99  | 97                 | 115                | 95                 | 115                | 99                 |
| LCSD 410-300284/3-A | Lab Control Sample Dup | 101   | 101                | 109                | 104                | 113                | 105                |
| MB 410-300284/1-A   | Method Blank           | 99  | 97                 | 113                | 100                | 107                | 100                |

**Surrogate Legend**

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98353-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-300284/1-A**  
**Matrix: Water**  
**Analysis Batch: 301853**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 300284**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 1.0  | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 99        |           | 31 - 182 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C8 PFOA        | 97        |           | 48 - 162 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C9 PFNA        | 113       |           | 51 - 167 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C3 PFHxS       | 100       |           | 28 - 188 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C8 PFOS        | 107       |           | 51 - 159 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C6 PFDA        | 100       |           | 49 - 163 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |

**Lab Sample ID: LCS 410-300284/2-A**  
**Matrix: Water**  
**Analysis Batch: 301853**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 300284**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 22.0       |               | ng/L |   | 86   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 21.4       |               | ng/L |   | 83   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 20.1       |               | ng/L |   | 86   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 19.7       |               | ng/L |   | 83   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 22.7       |               | ng/L |   | 89   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 99        |           | 31 - 182 |
| 13C8 PFOA        | 97        |           | 48 - 162 |
| 13C9 PFNA        | 115       |           | 51 - 167 |
| 13C3 PFHxS       | 95        |           | 28 - 188 |
| 13C8 PFOS        | 115       |           | 51 - 159 |
| 13C6 PFDA        | 99        |           | 49 - 163 |

**Lab Sample ID: LCSD 410-300284/3-A**  
**Matrix: Water**  
**Analysis Batch: 301853**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 300284**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-----------|
|                                      |             |             |                |      |   |      |             |     |           |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 22.5        |                | ng/L |   | 88   | 51 - 145    | 2   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 21.6        |                | ng/L |   | 85   | 61 - 139    | 1   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.8        |                | ng/L |   | 85   | 58 - 134    | 2   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 20.0        |                | ng/L |   | 84   | 45 - 150    | 2   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 23.0        |                | ng/L |   | 90   | 56 - 138    | 1   | 30        |

Eurofins Lancaster Laboratories Environment Testing, LLC

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98353-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD LCSD</i> |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 101              |                  | 31 - 182      |
| 13C8 PFOA               | 101              |                  | 48 - 162      |
| 13C9 PFNA               | 109              |                  | 51 - 167      |
| 13C3 PFHxS              | 104              |                  | 28 - 188      |
| 13C8 PFOS               | 113              |                  | 51 - 159      |
| 13C6 PFDA               | 105              |                  | 49 - 163      |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98353-1

## LCMS

### Prep Batch: 300284

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-98353-1         | 52-13_20220915         | Total/NA  | Water  | 537 IDA |            |
| MB 410-300284/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-300284/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-300284/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 301853

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-98353-1         | 52-13_20220915         | Total/NA  | Water  | 537 IDA | 300284     |
| MB 410-300284/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 300284     |
| LCS 410-300284/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 300284     |
| LCSD 410-300284/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 300284     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98353-1

**Client Sample ID: 52-13\_20220915**

**Lab Sample ID: 410-98353-1**

**Date Collected: 09/15/22 11:02**

**Matrix: Water**

**Date Received: 09/17/22 10:24**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 300284       | D5VP          | ELLE | 09/27/22 11:37       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 301853       | QD9Y          | ELLE | 10/01/22 05:17       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98353-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |



# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98353-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98353-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-98353-1   | 52-13_20220915   | Water  | 09/15/22 11:02 | 09/17/22 10:24 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-98353-1

**Login Number: 98353**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: McBeth, Jessica**

| Question   | Answer | Comment      |
|--|--------|--------------|
| The cooler's custody seal is intact.   | True   |              |
| The cooler or samples do not appear to have been compromised or tampered with.             | True   |              |
| Samples were received on ice.  | True   |              |
| Cooler Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen).        | True   |              |
| Cooler Temperature is recorded.  | True   |              |
| WV: Container Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen). | N/A    |              |
| WV: Container Temperature is recorded.   | N/A    |              |
| COC is present.  | True   |              |
| COC is filled out in ink and legible.  | True   |              |
| COC is filled out with all pertinent information.  | True   |              |
| There are no discrepancies between the containers received and the COC.                    | True   |              |
| Sample containers have legible labels.   | True   |              |
| Containers are not broken or leaking.  | True   |              |
| Sample collection date/times are provided.   | True   |              |
| Appropriate sample containers are used.  | True   |              |
| Sample bottles are completely filled.  | True   |              |
| There is sufficient vol. for all requested analyses.                                       | True   |              |
| Is the Field Sampler's name present on COC?  | True   |              |
| Sample custody seals are intact.   | N/A    | Not present. |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?                | N/A    |              |



## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-95921-1

Client Project/Site: N. Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



Authorized for release by:  
9/26/2022 11:07:37 PM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer".

---

Kelly Bauer  
Project Manager  
9/26/2022 11:07:37 PM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 10 |
| Lab Chronicle . . . . .            | 11 |
| Certification Summary . . . . .    | 12 |
| Method Summary . . . . .           | 13 |
| Sample Summary . . . . .           | 14 |
| Chain of Custody . . . . .         | 15 |
| Receipt Checklists . . . . .       | 16 |



# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95921-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| B         | Compound was found in the blank and sample.  |
| cn        | Refer to Case Narrative for further detail   |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| ▫              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95921-1

---

**Job ID: 410-95921-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative  
410-95921-1**

**Receipt**

The sample was received on 8/26/2022 10:28 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C

**PFAS**

Method PFC\_IDA: Target analyte: Perfluorooctanoic acid (PFOA) was detected in the method blank associated with the following sample: 52-16\_20220825 (410-95921-1). The following action was taken: This sample(s) was re-extracted outside the required holding time and target analyte(s) were not detected in the re-extracted method blank.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95921-1

**Client Sample ID: 52-16\_20220825**

**Lab Sample ID: 410-95921-1**

| Analyte                       | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluorooctanoic acid (PFOA) | 0.53   | J B cn    | 1.7 | 0.43 | ng/L | 1       |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95921-1

**Client Sample ID: 52-16\_20220825**

**Lab Sample ID: 410-95921-1**

Date Collected: 08/25/22 10:40

Matrix: Water

Date Received: 08/26/22 10:28

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result      | Qualifier     | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-------------|---------------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND          |               | 1.7 | 0.43 | ng/L |   | 09/06/22 16:03 | 09/09/22 22:02 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b> | <b>0.53</b> | <b>J B cn</b> | 1.7 | 0.43 | ng/L |   | 09/06/22 16:03 | 09/09/22 22:02 | 1       |
| Perfluorononanoic acid (PFNA)        | ND          |               | 1.7 | 0.43 | ng/L |   | 09/06/22 16:03 | 09/09/22 22:02 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND          |               | 1.7 | 0.43 | ng/L |   | 09/06/22 16:03 | 09/09/22 22:02 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND          | cn            | 1.7 | 0.43 | ng/L |   | 09/06/22 16:03 | 09/09/22 22:02 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND          |               | 1.7 | 0.43 | ng/L |   | 09/06/22 16:03 | 09/09/22 22:02 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 121       |           | 31 - 182 | 09/06/22 16:03 | 09/09/22 22:02 | 1       |
| 13C8 PFOA        | 117       |           | 48 - 162 | 09/06/22 16:03 | 09/09/22 22:02 | 1       |
| 13C9 PFNA        | 102       |           | 51 - 167 | 09/06/22 16:03 | 09/09/22 22:02 | 1       |
| 13C3 PFHxS       | 135       |           | 28 - 188 | 09/06/22 16:03 | 09/09/22 22:02 | 1       |
| 13C8 PFOS        | 113       |           | 51 - 159 | 09/06/22 16:03 | 09/09/22 22:02 | 1       |
| 13C6 PFDA        | 113       |           | 49 - 163 | 09/06/22 16:03 | 09/09/22 22:02 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95921-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID   | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|--------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                    | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-95921-1        | 52-16_20220825     | 121   | 117                | 102                | 135                | 113                | 113                |
| LCS 410-293086/2-A | Lab Control Sample | 120   | 119                | 120                | 134                | 117                | 110                |
| MB 410-293086/1-A  | Method Blank       | 98  | 100                | 103                | 101                | 100                | 99                 |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95921-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-293086/1-A**  
**Matrix: Water**  
**Analysis Batch: 294182**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 293086**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | 1.07   | J         | 2.0 | 0.50 | ng/L |   | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| Perfluorooctanoic acid (PFOA)        | 1.14   | J         | 2.0 | 0.50 | ng/L |   | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| Perfluorononanoic acid (PFNA)        | 1.10   | J         | 2.0 | 0.50 | ng/L |   | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 0.940  | J         | 2.0 | 0.50 | ng/L |   | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 1.14   | J         | 2.0 | 0.50 | ng/L |   | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| Perfluorodecanoic acid (PFDA)        | 1.09   | J         | 2.0 | 0.50 | ng/L |   | 09/06/22 16:03 | 09/09/22 20:22 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 98        |           | 31 - 182 | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| 13C8 PFOA        | 100       |           | 48 - 162 | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| 13C9 PFNA        | 103       |           | 51 - 167 | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| 13C3 PFHxS       | 101       |           | 28 - 188 | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| 13C8 PFOS        | 100       |           | 51 - 159 | 09/06/22 16:03 | 09/09/22 20:22 | 1       |
| 13C6 PFDA        | 99        |           | 49 - 163 | 09/06/22 16:03 | 09/09/22 20:22 | 1       |

**Lab Sample ID: LCS 410-293086/2-A**  
**Matrix: Water**  
**Analysis Batch: 294182**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 293086**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 24.4       |               | ng/L |   | 95   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 25.6       |               | ng/L |   | 100  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 20.0       |               | ng/L |   | 86   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.0       |               | ng/L |   | 97   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 25.7       |               | ng/L |   | 101  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 120       |           | 31 - 182 |
| 13C8 PFOA        | 119       |           | 48 - 162 |
| 13C9 PFNA        | 120       |           | 51 - 167 |
| 13C3 PFHxS       | 134       |           | 28 - 188 |
| 13C8 PFOS        | 117       |           | 51 - 159 |
| 13C6 PFDA        | 110       |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95921-1

## LCMS

### Prep Batch: 293086

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95921-1        | 52-16_20220825     | Total/NA  | Water  | 537 IDA |            |
| MB 410-293086/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-293086/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 294182

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95921-1        | 52-16_20220825     | Total/NA  | Water  | 537 IDA | 293086     |
| MB 410-293086/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 293086     |
| LCS 410-293086/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 293086     |

### Prep Batch: 297645

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95921-1 - RE   | 52-16_20220825     | Total/NA  | Water  | 537 IDA |            |
| MB 410-297645/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-297645/3-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 299277

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95921-1 - RE   | 52-16_20220825     | Total/NA  | Water  | 537 IDA | 297645     |
| MB 410-297645/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 297645     |
| LCS 410-297645/3-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 297645     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95921-1

**Client Sample ID: 52-16\_20220825**

**Lab Sample ID: 410-95921-1**

**Date Collected: 08/25/22 10:40**

**Matrix: Water**

**Date Received: 08/26/22 10:28**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 293086       | GMZ5          | ELLE | 09/06/22 16:03       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 294182       | ZG8V          | ELLE | 09/09/22 22:02       |
| Total/NA  | Prep       | 537 IDA      | RE  |                 | 297645       | M4QQ          | ELLE | 09/20/22 08:07       |
| Total/NA  | Analysis   | 537 IDA      | RE  | 1               | 299277       | DQV6          | ELLE | 09/23/22 15:20       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300





# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95921-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95921-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95921-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-95921-1   | 52-16_20220825   | Water  | 08/25/22 10:40 | 08/26/22 10:28 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



Lancaster Laboratories  
Environmental

Envir



410-95921 Chain of Custody

Request/Chain of Custody

Sample # \_\_\_\_\_

|   |                                    |  |       |                                      |  |   |  |                                 |  |         |  |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
|---|------------------------------------|--|-------|--------------------------------------|--|---|--|---------------------------------|--|---------|--|--|--|--|--------------|-------------------------|--------------------|--|--|--|---------|-----------------|--|--|----------------------|----------|--|--|------------------------------------|------------------------------------|--|--|--------------------|-----------|--|--|
| Client: <b>Sanborn Head &amp; Associates</b>  |                                    |  |       | <b>Matrix</b>                        |  |   |  | <b>Analyses Requested</b>       |  |         |  |  |  |  |              | <b>For Lab Use Only</b> |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Project Name/#: N. Monmouth PFAS 5197.01  |                                    | Site ID #:   |       | <input type="checkbox"/> Tissue      | <input type="checkbox"/> Ground                  | <input type="checkbox"/> Surface            | <b>Preservation and Filtration Codes</b> |                                 |  |         |  |  |  |  | SF #: _____  |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Project Manager: Andrew Buchy   |                                    | P.O. #: 5197.01  |       | <input type="checkbox"/> Sediment    | <input type="checkbox"/> Polable                 | <input type="checkbox"/> NPDES              |  |                                 |  |         |  |  |  |  | SCR #: _____ |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Sampler: Don Kelsey   |                                    | PWSID #:   |       | <input type="checkbox"/> Soil        | <input checked="" type="checkbox"/> Water        | <input type="checkbox"/> Other: Field Blank | Total # of Containers                    |                                 | <table border="1"> <tr> <td colspan="4">Preservation Codes</td> </tr> <tr> <td>H = HCl</td> <td colspan="2">T = Thiosulfate</td> <td></td> </tr> <tr> <td>N = HNO<sub>3</sub></td> <td colspan="2">B = NaOH</td> <td></td> </tr> <tr> <td>S = H<sub>2</sub>SO<sub>4</sub></td> <td colspan="2">P = H<sub>3</sub>PO<sub>4</sub></td> <td></td> </tr> <tr> <td>F = Field Filtered</td> <td colspan="2">O = Other</td> <td></td> </tr> </table> |         |  |  |  |  |              |                         | Preservation Codes |  |  |  | H = HCl | T = Thiosulfate |  |  | N = HNO <sub>3</sub> | B = NaOH |  |  | S = H <sub>2</sub> SO <sub>4</sub> | P = H <sub>3</sub> PO <sub>4</sub> |  |  | F = Field Filtered | O = Other |  |  |
| Preservation Codes  |                                    |  |       |                                      |  |   |  |                                 |  |         |  |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| H = HCl   | T = Thiosulfate                    |  |       |                                      |  |   |  |                                 |  |         |  |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| N = HNO <sub>3</sub>  | B = NaOH                           |  |       |                                      |  |   |  |                                 |  |         |  |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| S = H <sub>2</sub> SO <sub>4</sub>  | P = H <sub>3</sub> PO <sub>4</sub> |  |       |                                      |  |   |  |                                 |  |         |  |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| F = Field Filtered  | O = Other                          |  |       |                                      |  |   |  |                                 |  |         |  |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Phone #: 603-229-1900   |                                    | Quote #:   |       | <input type="checkbox"/> Composite   | PFAS 537 Mod with isotope dilution (6 compounds) |   |  |                                 |  |         |  |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| State where samples were collected: ME  |                                    | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/> |       | <b>Collection</b>                    |  |   |  |                                 |  |         |  |  |  |  |              | <b>Remarks</b>          |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
|   |                                    | Date   | Time  | Grab                                 |  |   |  |                                 |  |         |  |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| <b>Sample Identification</b>  |                                    |  |       |                                      |  |   |  |                                 |  |         |  |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| 52-16_20220825  |                                    | 8/25/2022  | 10:40 | X                                    |  |   | X  |                                 | 2  | X       |  |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| <b>Turnaround Time Requested (TAT)</b> (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |                                    |  |       | Relinquished by: <i>[Signature]</i>  |  | Date  | Time                                     | Received by:                    |  | Date    | Time                                   |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| (Rush TAT is subject to laboratory approval and surcharges.)  |                                    |  |       |                                      |  | 8/24/22                                     | 13:00                                    |                                 |  |         |  |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Date results are needed:  |                                    |  |       | Relinquished by:                     |  | Date  | Time                                     | Received by:                    |  | Date    | Time                                   |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Rush results requested by (please check): E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>                          |                                    |  |       | Relinquished by:                     |  | Date  | Time                                     | Received by:                    |  | Date    | Time                                   |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| E-mail Address:   |                                    |  |       | Relinquished by:                     |  | Date  | Time                                     | Received by:                    |  | Date    | Time                                   |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Phone:  |                                    |  |       | Relinquished by:                     |  | Date  | Time                                     | Received by:                    |  | Date    | Time                                   |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| <b>Data Package Options</b> (please check if required)  |                                    |  |       | Relinquished by:                     |  | Date  | Time                                     | Received by:                    |  | Date    | Time                                   |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Level I <input type="checkbox"/>  |                                    | MA MCP <input type="checkbox"/>  |       | Relinquished by:                     |  | Date  | Time                                     | Received by:                    |  | Date    | Time                                   |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Level II <input checked="" type="checkbox"/>  |                                    | CT RCP <input type="checkbox"/>  |       | Relinquished by:                     |  | Date  | Time                                     | Received by: <i>[Signature]</i> |  | 8/26/22 | 10:28                                  |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| Level VI <input type="checkbox"/>   |                                    | TX TRRP-13 <input type="checkbox"/>                                      |       | Relinquished by Commercial Carrier:  |  |   |  |                                 |  |         |  |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| NJ DKQP <input type="checkbox"/>  |                                    | NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B |       |                                      |  |   |  |                                 |  |         | Temperature upon receipt <u>2.0</u> °C |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| EQUIS 4-file format/SHA   |                                    |  |       | Relinquished by:                     |  |   |  |                                 |  |         |  |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |                                    |  |       | If yes, format: Standard (flat file) |  |   |  |                                 |  |         |  |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |
|   |                                    |  |       | UPS _____ FedEx _____ Other _____    |  |   |  |                                 |  |         |  |  |  |  |              |                         |                    |  |  |  |         |                 |  |  |                      |          |  |  |                                    |                                    |  |  |                    |           |  |  |

## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-95921-1

**Login Number: 95921**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: Renner, Melissa**

| Question   | Answer | Comment      |
|--|--------|--------------|
| The cooler's custody seal is intact.   | True   |              |
| The cooler or samples do not appear to have been compromised or tampered with.             | True   |              |
| Samples were received on ice.  | True   |              |
| Cooler Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen).        | True   |              |
| Cooler Temperature is recorded.  | True   |              |
| WV: Container Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen). | N/A    |              |
| WV: Container Temperature is recorded.   | N/A    |              |
| COC is present.  | True   |              |
| COC is filled out in ink and legible.  | True   |              |
| COC is filled out with all pertinent information.  | True   |              |
| There are no discrepancies between the containers received and the COC.                    | True   |              |
| Sample containers have legible labels.   | True   |              |
| Containers are not broken or leaking.  | True   |              |
| Sample collection date/times are provided.   | True   |              |
| Appropriate sample containers are used.  | True   |              |
| Sample bottles are completely filled.  | True   |              |
| There is sufficient vol. for all requested analyses.                                       | True   |              |
| Is the Field Sampler's name present on COC?  | True   |              |
| Sample custody seals are intact.   | N/A    | Not present. |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?                | N/A    |              |



## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-95920-1

Client Project/Site: N. Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



*Authorized for release by:*  
9/9/2022 9:27:55 AM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer".

---

Kelly Bauer  
Project Manager  
9/9/2022 9:27:55 AM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 10 |
| Lab Chronicle . . . . .            | 11 |
| Certification Summary . . . . .    | 12 |
| Method Summary . . . . .           | 13 |
| Sample Summary . . . . .           | 14 |
| Chain of Custody . . . . .         | 15 |
| Receipt Checklists . . . . .       | 16 |



## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95920-1

### Qualifiers

#### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| I         | Value is EMPC (estimated maximum possible concentration).  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95920-1

---

## Job ID: 410-95920-1

---

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

### Narrative

---

Job Narrative  
410-95920-1

### Receipt

The sample was received on 8/26/2022 10:28 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C

### PFAS

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95920-1

**Client Sample ID: 52-19\_20220825**

**Lab Sample ID: 410-95920-1**

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluorooctanoic acid (PFOA)       | 1.8    |           | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS) | 0.57   | J I       | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95920-1

**Client Sample ID: 52-19\_20220825**

**Lab Sample ID: 410-95920-1**

Date Collected: 08/25/22 10:10

Matrix: Water

Date Received: 08/26/22 10:28

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                                    | Result      | Qualifier  | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|-------------|------------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)            | ND          |            | 1.6 | 0.40 | ng/L |   | 09/06/22 16:57 | 09/08/22 13:15 | 1       |
| <b>Perfluorooctanoic acid (PFOA)</b>       | <b>1.8</b>  |            | 1.6 | 0.40 | ng/L |   | 09/06/22 16:57 | 09/08/22 13:15 | 1       |
| Perfluorononanoic acid (PFNA)              | ND          |            | 1.6 | 0.40 | ng/L |   | 09/06/22 16:57 | 09/08/22 13:15 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)       | ND          |            | 1.6 | 0.40 | ng/L |   | 09/06/22 16:57 | 09/08/22 13:15 | 1       |
| <b>Perfluorooctanesulfonic acid (PFOS)</b> | <b>0.57</b> | <b>J I</b> | 1.6 | 0.40 | ng/L |   | 09/06/22 16:57 | 09/08/22 13:15 | 1       |
| Perfluorodecanoic acid (PFDA)              | ND          |            | 1.6 | 0.40 | ng/L |   | 09/06/22 16:57 | 09/08/22 13:15 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 96        |           | 31 - 182 | 09/06/22 16:57 | 09/08/22 13:15 | 1       |
| 13C8 PFOA        | 90        |           | 48 - 162 | 09/06/22 16:57 | 09/08/22 13:15 | 1       |
| 13C9 PFNA        | 96        |           | 51 - 167 | 09/06/22 16:57 | 09/08/22 13:15 | 1       |
| 13C3 PFHxS       | 100       |           | 28 - 188 | 09/06/22 16:57 | 09/08/22 13:15 | 1       |
| 13C8 PFOS        | 92        |           | 51 - 159 | 09/06/22 16:57 | 09/08/22 13:15 | 1       |
| 13C6 PFDA        | 92        |           | 49 - 163 | 09/06/22 16:57 | 09/08/22 13:15 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95920-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID      | Client Sample ID   | C4PFHA<br>(31-182) | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 410-95920-1        | 52-19_20220825     | 96                 | 90                 | 96                 | 100                | 92                 | 92                 |
| LCS 410-293098/2-A | Lab Control Sample | 99                 | 97                 | 104                | 106                | 104                | 98                 |
| MB 410-293098/1-A  | Method Blank       | 93                 | 94                 | 100                | 97                 | 99                 | 97                 |

### Surrogate Legend

C4PFHA = 13C4 PFHpA  
C8PFOA = 13C8 PFOA  
C9PFNA = 13C9 PFNA  
C3PFHS = 13C3 PFHxS  
C8PFOS = 13C8 PFOS  
C6PFDA = 13C6 PFDA

# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95920-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-293098/1-A**  
**Matrix: Water**  
**Analysis Batch: 293723**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 293098**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/06/22 16:57 | 09/08/22 09:00 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 93        |           | 31 - 182 | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| 13C8 PFOA        | 94        |           | 48 - 162 | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| 13C9 PFNA        | 100       |           | 51 - 167 | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| 13C3 PFHxS       | 97        |           | 28 - 188 | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| 13C8 PFOS        | 99        |           | 51 - 159 | 09/06/22 16:57 | 09/08/22 09:00 | 1       |
| 13C6 PFDA        | 97        |           | 49 - 163 | 09/06/22 16:57 | 09/08/22 09:00 | 1       |

**Lab Sample ID: LCS 410-293098/2-A**  
**Matrix: Water**  
**Analysis Batch: 293723**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 293098**

| Analyte                              | Spike Added | LCS    | LCS       | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|
|                                      |             | Result | Qualifier |      |   |      |             |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 24.7   |           | ng/L |   | 97   | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 24.0   |           | ng/L |   | 94   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 25.1   |           | ng/L |   | 98   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 20.3   |           | ng/L |   | 87   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 22.3   |           | ng/L |   | 94   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 24.7   |           | ng/L |   | 97   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 99        |           | 31 - 182 |
| 13C8 PFOA        | 97        |           | 48 - 162 |
| 13C9 PFNA        | 104       |           | 51 - 167 |
| 13C3 PFHxS       | 106       |           | 28 - 188 |
| 13C8 PFOS        | 104       |           | 51 - 159 |
| 13C6 PFDA        | 98        |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95920-1

## LCMS

### Prep Batch: 293098

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95920-1        | 52-19_20220825     | Total/NA  | Water  | 537 IDA |            |
| MB 410-293098/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-293098/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 293723

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-95920-1        | 52-19_20220825     | Total/NA  | Water  | 537 IDA | 293098     |
| MB 410-293098/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 293098     |
| LCS 410-293098/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 293098     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95920-1

**Client Sample ID: 52-19\_20220825**

**Lab Sample ID: 410-95920-1**

**Date Collected: 08/25/22 10:10**

**Matrix: Water**

**Date Received: 08/26/22 10:28**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 293098       | JU9U    | ELLE | 09/06/22 16:57       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 293723       | ZG8V    | ELLE | 09/08/22 13:15       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95920-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95920-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-95920-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-95920-1   | 52-19_20220825   | Water  | 08/25/22 10:10 | 08/26/22 10:28 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-95920-1

**Login Number: 95920**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: Renner, Melissa**

| Question   | Answer | Comment      |
|--|--------|--------------|
| The cooler's custody seal is intact.   | True   |              |
| The cooler or samples do not appear to have been compromised or tampered with.             | True   |              |
| Samples were received on ice.  | True   |              |
| Cooler Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen).        | True   |              |
| Cooler Temperature is recorded.  | True   |              |
| WV: Container Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen). | N/A    |              |
| WV: Container Temperature is recorded.   | N/A    |              |
| COC is present.  | True   |              |
| COC is filled out in ink and legible.  | True   |              |
| COC is filled out with all pertinent information.  | True   |              |
| There are no discrepancies between the containers received and the COC.                    | True   |              |
| Sample containers have legible labels.   | True   |              |
| Containers are not broken or leaking.  | True   |              |
| Sample collection date/times are provided.   | True   |              |
| Appropriate sample containers are used.  | True   |              |
| Sample bottles are completely filled.  | True   |              |
| There is sufficient vol. for all requested analyses.                                       | True   |              |
| Is the Field Sampler's name present on COC?  | True   |              |
| Sample custody seals are intact.   | N/A    | Not present. |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?                | N/A    |              |

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-88955-1

Client Project/Site: N. Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



*Authorized for release by:*

*7/20/2022 9:23:01 PM*

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer".

---

Kelly Bauer  
Project Manager  
7/20/2022 9:23:01 PM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 11 |
| Lab Chronicle . . . . .            | 12 |
| Certification Summary . . . . .    | 13 |
| Method Summary . . . . .           | 14 |
| Sample Summary . . . . .           | 15 |
| Chain of Custody . . . . .         | 16 |
| Receipt Checklists . . . . .       | 17 |



# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88955-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88955-1

---

## Job ID: 410-88955-1

---

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

### Narrative

---

Job Narrative  
410-88955-1

### Receipt

The sample was received on 6/25/2022 11:05 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.8°C

### PFAS

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88955-1

Client Sample ID: 52-25\_20220623

Lab Sample ID: 410-88955-1

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil | Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|-----|-----|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 0.50   | J         | 1.6 | 0.41 | ng/L | 1   |     |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 3.2    |           | 1.6 | 0.41 | ng/L | 1   |     |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 0.59   | J         | 1.6 | 0.41 | ng/L | 1   |     |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 0.92   | J         | 1.6 | 0.41 | ng/L | 1   |     |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88955-1

**Client Sample ID: 52-25\_20220623**

**Lab Sample ID: 410-88955-1**

Date Collected: 06/23/22 11:25

Matrix: Water

Date Received: 06/25/22 11:05

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 0.50      | J         | 1.6      | 0.41 | ng/L |   | 07/06/22 16:08 | 07/18/22 12:38 | 1       |
| Perfluorooctanoic acid (PFOA)        | 3.2       |           | 1.6      | 0.41 | ng/L |   | 07/06/22 16:08 | 07/18/22 12:38 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 07/06/22 16:08 | 07/18/22 12:38 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 0.59      | J         | 1.6      | 0.41 | ng/L |   | 07/06/22 16:08 | 07/18/22 12:38 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 0.92      | J         | 1.6      | 0.41 | ng/L |   | 07/06/22 16:08 | 07/18/22 12:38 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 07/06/22 16:08 | 07/18/22 12:38 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 91        |           | 31 - 182 |      |      |   | 07/06/22 16:08 | 07/18/22 12:38 | 1       |
| 13C8 PFOA                            | 96        |           | 48 - 162 |      |      |   | 07/06/22 16:08 | 07/18/22 12:38 | 1       |
| 13C9 PFNA                            | 103       |           | 51 - 167 |      |      |   | 07/06/22 16:08 | 07/18/22 12:38 | 1       |
| 13C3 PFHxS                           | 92        |           | 28 - 188 |      |      |   | 07/06/22 16:08 | 07/18/22 12:38 | 1       |
| 13C8 PFOS                            | 94        |           | 51 - 159 |      |      |   | 07/06/22 16:08 | 07/18/22 12:38 | 1       |
| 13C6 PFDA                            | 97        |           | 49 - 163 |      |      |   | 07/06/22 16:08 | 07/18/22 12:38 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88955-1

**Method: 537 IDA - EPA 537 Isotope Dilution**

**Matrix: Water**

**Prep Type: Total/NA**

| Lab Sample ID       | Client Sample ID       | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|---------------------|------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                     |                        | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-88955-1         | 52-25_20220623         | 91  | 96                 | 103                | 92                 | 94                 | 97                 |
| LCS 410-272830/2-A  | Lab Control Sample     | 100   | 106                | 105                | 104                | 102                | 103                |
| LCSD 410-272830/3-A | Lab Control Sample Dup | 108   | 113                | 119                | 107                | 113                | 119                |
| MB 410-272830/1-A   | Method Blank           | 117   | 112                | 109                | 110                | 105                | 103                |

**Surrogate Legend**

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88955-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-272830/1-A**  
**Matrix: Water**  
**Analysis Batch: 277613**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 272830**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 16:08 | 07/20/22 15:03 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 16:08 | 07/20/22 15:03 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 16:08 | 07/20/22 15:03 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 16:08 | 07/20/22 15:03 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 16:08 | 07/20/22 15:03 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 16:08 | 07/20/22 15:03 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 117       |           | 31 - 182 | 07/06/22 16:08 | 07/20/22 15:03 | 1       |
| 13C8 PFOA        | 112       |           | 48 - 162 | 07/06/22 16:08 | 07/20/22 15:03 | 1       |
| 13C9 PFNA        | 109       |           | 51 - 167 | 07/06/22 16:08 | 07/20/22 15:03 | 1       |
| 13C3 PFHxS       | 110       |           | 28 - 188 | 07/06/22 16:08 | 07/20/22 15:03 | 1       |
| 13C8 PFOS        | 105       |           | 51 - 159 | 07/06/22 16:08 | 07/20/22 15:03 | 1       |
| 13C6 PFDA        | 103       |           | 49 - 163 | 07/06/22 16:08 | 07/20/22 15:03 | 1       |

**Lab Sample ID: LCS 410-272830/2-A**  
**Matrix: Water**  
**Analysis Batch: 277613**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 272830**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 22.9       |               | ng/L |   | 89   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 23.9       |               | ng/L |   | 93   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 22.1       |               | ng/L |   | 95   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 22.0       |               | ng/L |   | 93   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 24.1       |               | ng/L |   | 94   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 100       |           | 31 - 182 |
| 13C8 PFOA        | 106       |           | 48 - 162 |
| 13C9 PFNA        | 105       |           | 51 - 167 |
| 13C3 PFHxS       | 104       |           | 28 - 188 |
| 13C8 PFOS        | 102       |           | 51 - 159 |
| 13C6 PFDA        | 103       |           | 49 - 163 |

**Lab Sample ID: LCSD 410-272830/3-A**  
**Matrix: Water**  
**Analysis Batch: 276627**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 272830**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-----------|
|                                      |             |             |                |      |   |      |             |     |           |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 24.0        |                | ng/L |   | 94   | 51 - 145    | 5   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 23.2        |                | ng/L |   | 91   | 61 - 139    | 3   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 22.7        |                | ng/L |   | 97   | 58 - 134    | 3   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 22.7        |                | ng/L |   | 96   | 45 - 150    | 3   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 23.4        |                | ng/L |   | 92   | 56 - 138    | 3   | 30        |

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88955-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD LCSD</i> |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 108              |                  | 31 - 182      |
| 13C8 PFOA               | 113              |                  | 48 - 162      |
| 13C9 PFNA               | 119              |                  | 51 - 167      |
| 13C3 PFHxS              | 107              |                  | 28 - 188      |
| 13C8 PFOS               | 113              |                  | 51 - 159      |
| 13C6 PFDA               | 119              |                  | 49 - 163      |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88955-1

## LCMS

### Prep Batch: 272830

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-88955-1         | 52-25_20220623         | Total/NA  | Water  | 537 IDA |            |
| MB 410-272830/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-272830/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-272830/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 276627

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-88955-1         | 52-25_20220623         | Total/NA  | Water  | 537 IDA | 272830     |
| LCSD 410-272830/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 272830     |

### Analysis Batch: 277613

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| MB 410-272830/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 272830     |
| LCS 410-272830/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 272830     |





# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88955-1

**Client Sample ID: 52-25\_20220623**

**Lab Sample ID: 410-88955-1**

**Date Collected: 06/23/22 11:25**

**Matrix: Water**

**Date Received: 06/25/22 11:05**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab  |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 272830       | 07/06/22 16:08       | K9VR    | ELLE |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 276627       | 07/18/22 12:38       | PY4D    | ELLE |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88955-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |



# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88955-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88955-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-88955-1   | 52-25_20220623   | Water  | 06/23/22 11:25 | 06/25/22 11:05 |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-88955-1

Login Number: 88955

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Renner, Melissa

| Question   | Answer | Comment      |
|--|--------|--------------|
| The cooler's custody seal is intact.   | N/A    | Not present  |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |              |
| Samples were received on ice.  | True   |              |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |              |
| Cooler Temperature is recorded.  | True   |              |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |              |
| WV: Container Temperature is recorded.   | N/A    |              |
| COC is present.  | True   |              |
| COC is filled out in ink and legible.  | True   |              |
| COC is filled out with all pertinent information.                                    | True   |              |
| There are no discrepancies between the containers received and the COC.              | True   |              |
| Sample containers have legible labels.   | True   |              |
| Containers are not broken or leaking.  | True   |              |
| Sample collection date/times are provided.   | True   |              |
| Appropriate sample containers are used.  | True   |              |
| Sample bottles are completely filled.  | True   |              |
| There is sufficient vol. for all requested analyses.                                 | True   |              |
| Is the Field Sampler's name present on COC?  | True   |              |
| Sample custody seals are intact.   | N/A    | Not present. |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |              |

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-85998-3  
Client Project/Site: PFAS in Groundwater

For:  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



Authorized for release by:  
6/17/2022 7:57:59 AM

Kelly Bauer, Project Manager  
(717)556-7262  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer".

---

Kelly Bauer  
Project Manager  
6/17/2022 7:57:59 AM





# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 10 |
| Lab Chronicle . . . . .            | 11 |
| Certification Summary . . . . .    | 12 |
| Method Summary . . . . .           | 13 |
| Sample Summary . . . . .           | 14 |
| Chain of Custody . . . . .         | 15 |
| Receipt Checklists . . . . .       | 16 |

# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-3

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| B         | Compound was found in the blank and sample.  |
| cn        | Refer to Case Narrative for further detail   |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| ▫              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-3

---

**Job ID: 410-85998-3**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

---

**Narrative**

**Job Narrative  
410-85998-3**

**Receipt**

The samples were received on 6/2/2022 10:23 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.5°C

**PFAS**

Method PFC\_IDA: Perfluorooctanesulfonic acid (PFOS) were detected in the method blank associated with the following sample: 52-45\_20220601 (410-85998-3). The following action was taken: This sample(s) was re-extracted within the required holding time and Perfluorooctanesulfonic acid (PFOS) was again detected in the re-extracted method blank.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-3

Client Sample ID: 52-45\_20220601

Lab Sample ID: 410-85998-3

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 0.56   | J         | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 3.6    |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 0.51   | J         | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 0.88   | J B cn    | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: PFAS in Groundwater

Job ID: 410-85998-3

**Client Sample ID: 52-45\_20220601**

**Lab Sample ID: 410-85998-3**

Date Collected: 06/01/22 11:04

Matrix: Water

Date Received: 06/02/22 10:23

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 0.56   | J         | 1.7 | 0.42 | ng/L |   | 06/14/22 09:01 | 06/16/22 19:29 | 1       |
| Perfluorooctanoic acid (PFOA)        | 3.6    |           | 1.7 | 0.42 | ng/L |   | 06/14/22 09:01 | 06/16/22 19:29 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 1.7 | 0.42 | ng/L |   | 06/14/22 09:01 | 06/16/22 19:29 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 0.51   | J         | 1.7 | 0.42 | ng/L |   | 06/14/22 09:01 | 06/16/22 19:29 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 0.88   | J B cn    | 1.7 | 0.42 | ng/L |   | 06/14/22 09:01 | 06/16/22 19:29 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.7 | 0.42 | ng/L |   | 06/14/22 09:01 | 06/16/22 19:29 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 57        |           | 31 - 182 | 06/14/22 09:01 | 06/16/22 19:29 | 1       |
| 13C8 PFOA        | 56        |           | 48 - 162 | 06/14/22 09:01 | 06/16/22 19:29 | 1       |
| 13C9 PFNA        | 56        |           | 51 - 167 | 06/14/22 09:01 | 06/16/22 19:29 | 1       |
| 13C3 PFHxS       | 56        |           | 28 - 188 | 06/14/22 09:01 | 06/16/22 19:29 | 1       |
| 13C8 PFOS        | 60        |           | 51 - 159 | 06/14/22 09:01 | 06/16/22 19:29 | 1       |
| 13C6 PFDA        | 57        |           | 49 - 163 | 06/14/22 09:01 | 06/16/22 19:29 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: PFAS in Groundwater

Job ID: 410-85998-3

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID   | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|--------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                    | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-85998-3        | 52-45_20220601     | 57  | 56                 | 56                 | 56                 | 60                 | 57                 |
| LCS 410-265235/2-A | Lab Control Sample | 100   | 107                | 101                | 107                | 103                | 107                |
| MB 410-265235/1-A  | Method Blank       | 89  | 92                 | 98                 | 102                | 91                 | 87                 |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: PFAS in Groundwater

Job ID: 410-85998-3

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-265235/1-A**  
**Matrix: Water**  
**Analysis Batch: 266251**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 265235**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 0.829  | J         | 2.0 | 0.50 | ng/L |   | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/14/22 09:01 | 06/16/22 18:42 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 89        |           | 31 - 182 | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| 13C8 PFOA        | 92        |           | 48 - 162 | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| 13C9 PFNA        | 98        |           | 51 - 167 | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| 13C3 PFHxS       | 102       |           | 28 - 188 | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| 13C8 PFOS        | 91        |           | 51 - 159 | 06/14/22 09:01 | 06/16/22 18:42 | 1       |
| 13C6 PFDA        | 87        |           | 49 - 163 | 06/14/22 09:01 | 06/16/22 18:42 | 1       |

**Lab Sample ID: LCS 410-265235/2-A**  
**Matrix: Water**  
**Analysis Batch: 266251**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 265235**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 22.4       |               | ng/L |   | 88   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 23.9       |               | ng/L |   | 93   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.7       |               | ng/L |   | 84   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 21.7       |               | ng/L |   | 92   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 22.7       |               | ng/L |   | 89   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 100       |           | 31 - 182 |
| 13C8 PFOA        | 107       |           | 48 - 162 |
| 13C9 PFNA        | 101       |           | 51 - 167 |
| 13C3 PFHxS       | 107       |           | 28 - 188 |
| 13C8 PFOS        | 103       |           | 51 - 159 |
| 13C6 PFDA        | 107       |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-3

## LCMS

### Prep Batch: 264473

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-85998-3 - RE   | 52-45_20220601     | Total/NA  | Water  | 537 IDA |            |
| MB 410-264473/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-264473/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 264736

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-85998-3 - RE   | 52-45_20220601     | Total/NA  | Water  | 537 IDA | 264473     |
| MB 410-264473/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 264473     |
| LCS 410-264473/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 264473     |

### Prep Batch: 265235

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-85998-3        | 52-45_20220601     | Total/NA  | Water  | 537 IDA |            |
| MB 410-265235/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-265235/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 266251

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-85998-3        | 52-45_20220601     | Total/NA  | Water  | 537 IDA | 265235     |
| MB 410-265235/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 265235     |
| LCS 410-265235/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 265235     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-3

**Client Sample ID: 52-45\_20220601**

**Lab Sample ID: 410-85998-3**

**Date Collected: 06/01/22 11:04**

**Matrix: Water**

**Date Received: 06/02/22 10:23**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab  |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|------|
| Total/NA  | Prep       | 537 IDA      | RE  |                 | 264473       | 06/11/22 01:39       | ZWK6    | ELLE |
| Total/NA  | Analysis   | 537 IDA      | RE  | 1               | 264736       | 06/13/22 16:30       | ZG8V    | ELLE |
| Total/NA  | Prep       | 537 IDA      |     |                 | 265235       | 06/14/22 09:01       | PMS9    | ELLE |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 266251       | 06/16/22 19:29       | QD9Y    | ELLE |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-3

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-3

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-3

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-85998-3   | 52-45_20220601   | Water  | 06/01/22 11:04 | 06/02/22 10:23 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

**Eurofins Lancaster Laboratories Environme**

2425 New Holland Pike  
Lancaster, PA 17601  
Phone: 717-856-2300 Fax: 717-856-2681

**Chain of Custody Record**



410-85998 Chain of Custody



Environment Testing  
America

|  |  |  |  |   |  |  |  |                                     |  |                            |  |
|--|--|--|--|---|--|--|--|-------------------------------------|--|----------------------------|--|
| <b>Client Information</b>  |  | Sampler: <u>D. Kessler (C. YIGOR)</u>  |  | Lab PM: Bauer, Kelly  |  | COC No: 410-57598-16397.1  |  |                                     |  |                            |  |
| Client Contact: Shana Whitney  |  | Phone: <u>603.312.4876</u>   |  | E-Mail: Kelly.Bauer@eLeurofinsus.com                        |  | Page: Page 1 of 1  |  |                                     |  |                            |  |
| Company: Sanborn Head & Associates Inc   |  | PWSID:   |  | <b>Analysis Requested</b>                                   |  | Job #: <u>5197.01</u>  |  |                                     |  |                            |  |
| Address: 20 Foundry Street   |  | Due Date Requested:  |  | Field Filtered Sample (Yes or No)<br>PFC_IDA - UCMR3 & PFAS |  | Preservation Codes:<br>A - HCL M - Hexane<br>B - NaOH N - None<br>C - Zn Acetate O - AsNaO2<br>D - Nitric Acid P - Na2O4S<br>E - NaHSO4 R - Na2S2O3<br>F - MeOH S - H2SO4<br>G - Amchlor T - TSP Dodecahydrate<br>H - Ascorbic Acid U - Acetone<br>I - Ice V - MCAA<br>J - DI Water W - pH 4-5<br>K - EDTA Y - Trizma<br>L - EDA Z - other (specify) |  |                                     |  |                            |  |
| City: Concord  |  | TAT Requested (days):  |  |   |  |  |  |                                     |  |                            |  |
| State, Zip: NH, 03301  |  | Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No |  |   |  |  |  |                                     |  |                            |  |
| Phone: <u>603-229-1900</u>   |  | PO #: Purchase Order Requested   |  |   |  |  |  |                                     |  |                            |  |
| Email: SWhitney@sanbornhead.com  |  | WO #:  |  |   |  |  |  |                                     |  |                            |  |
| Project Name: PFAS in Groundwater  |  | Project #: 41010916  |  | Total Number of Containers                                  |  | Other:   |  |                                     |  |                            |  |
| Site: <u>5197.01</u>   |  | SSOW#:   |  |   |  |  |  |                                     |  |                            |  |
| <b>Sample Identification</b>   |  | Sample Date  |  | Sample Time   |  | Sample Type (C=comp, G=grab)   |  | Matrix (Water, Solid, Tissue, A=As) |  | Special Instructions/Note: |  |
| <u>52-1-20220601</u>   |  | <u>6/1/22</u>  |  | <u>13:26</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |
| <u>52-79-20220601</u>  |  |  |  | <u>11:55</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |
| <u>52-45-20220601</u>  |  |  |  | <u>11:04</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |
| <u>52-10-20220601</u>  |  |  |  | <u>10:25</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |
| <u>40-18-20220601</u>  |  |  |  | <u>9:55</u>   |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |
| <u>FB-01-20220601</u>  |  | <u>6/1/22</u>  |  | <u>12:00</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |
| <b>Possible Hazard Identification</b>  |  |  |  |   |  | <b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>  |  |                                     |  |                            |  |
| <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological |  |  |  |   |  | <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months   |  |                                     |  |                            |  |
| Deliverable Requested: I, II, III, IV, Other (specify)   |  |  |  |   |  | Special Instructions/QC Requirements:  |  |                                     |  |                            |  |
| Empty Kit Relinquished by:   |  | Date:  |  | Time:   |  | Method of Shipment:  |  |                                     |  |                            |  |
| Relinquished by: <u>[Signature]</u>  |  | Date/Time: <u>5/25/22 13:30</u>  |  | Company: <u>EPINS SHA</u>                                   |  | Received by: <u>[Signature]</u>  |  | Date/Time: <u>5/31/22</u>           |  | Company: <u>SHA</u>        |  |
| Relinquished by: <u>[Signature]</u>  |  | Date/Time: <u>6/1/22 16:50</u>   |  | Company: <u>SHA</u>   |  | Received by: _____   |  | Date/Time: _____                    |  | Company: _____             |  |
| Relinquished by: _____   |  | Date/Time: _____   |  | Company: _____  |  | Received by: <u>Melody</u>   |  | Date/Time: <u>6-2-22 10:23</u>      |  | Company: <u>ELLET</u>      |  |
| Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No   |  | Custody Seal No.: <u>141112</u>  |  | Cooler Temperature(s) °C and Other Remarks: <u>3.5</u>      |  |  |  |                                     |  |                            |  |



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-85998-3

**Login Number: 85998**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: McCaskey, Jonathan**

| Question  | Answer | Comment |
|---|--------|---------|
| The cooler's custody seal is intact.  | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.    | True   |         |
| Samples were received on ice.   | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).        | True   |         |
| Cooler Temperature is recorded.   | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen). | N/A    |         |
| WV: Container Temperature is recorded.  | N/A    |         |
| COC is present.   | True   |         |
| COC is filled out in ink and legible.   | True   |         |
| COC is filled out with all pertinent information.                                 | True   |         |
| There are no discrepancies between the containers received and the COC.           | True   |         |
| Sample containers have legible labels.  | True   |         |
| Containers are not broken or leaking.   | True   |         |
| Sample collection date/times are provided.  | True   |         |
| Appropriate sample containers are used.   | True   |         |
| Sample bottles are completely filled.   | True   |         |
| There is sufficient vol. for all requested analyses.                              | True   |         |
| Is the Field Sampler's name present on COC?                                       | True   |         |
| Sample custody seals are intact.  | N/A    |         |

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-88953-1

Client Project/Site: N. Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



*Authorized for release by:*  
7/12/2022 7:58:04 PM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in cursive script that reads "Kelly Bauer".

---

Kelly Bauer  
Project Manager  
7/12/2022 7:58:04 PM





# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 11 |
| Lab Chronicle . . . . .            | 12 |
| Certification Summary . . . . .    | 13 |
| Method Summary . . . . .           | 14 |
| Sample Summary . . . . .           | 15 |
| Chain of Custody . . . . .         | 16 |
| Receipt Checklists . . . . .       | 17 |

# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88953-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description                                     |
|-----------|---|
| I         | Value is EMPC (estimated maximum possible concentration). |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88953-1

---

## Job ID: 410-88953-1

---

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

### Narrative

---

Job Narrative  
410-88953-1

### Receipt

The sample was received on 6/24/2022 11:05 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.8°C

### PFAS

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88953-1

Client Sample ID: 52-47\_20220623

Lab Sample ID: 410-88953-1

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil | Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|-----|-----|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 8.4    |           | 1.7 | 0.43 | ng/L |     | 1   |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 68     |           | 1.7 | 0.43 | ng/L |     | 1   |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 5.9    |           | 1.7 | 0.43 | ng/L |     | 1   |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 10     | I         | 1.7 | 0.43 | ng/L |     | 1   |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88953-1

**Client Sample ID: 52-47\_20220623**

**Lab Sample ID: 410-88953-1**

Date Collected: 06/23/22 10:30

Matrix: Water

Date Received: 06/24/22 11:05

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 8.4       |           | 1.7      | 0.43 | ng/L |   | 07/06/22 11:41 | 07/12/22 08:55 | 1       |
| Perfluorooctanoic acid (PFOA)        | 68        |           | 1.7      | 0.43 | ng/L |   | 07/06/22 11:41 | 07/12/22 08:55 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.7      | 0.43 | ng/L |   | 07/06/22 11:41 | 07/12/22 08:55 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 5.9       |           | 1.7      | 0.43 | ng/L |   | 07/06/22 11:41 | 07/12/22 08:55 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 10        | I         | 1.7      | 0.43 | ng/L |   | 07/06/22 11:41 | 07/12/22 08:55 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.7      | 0.43 | ng/L |   | 07/06/22 11:41 | 07/12/22 08:55 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 97        |           | 31 - 182 |      |      |   | 07/06/22 11:41 | 07/12/22 08:55 | 1       |
| 13C8 PFOA                            | 96        |           | 48 - 162 |      |      |   | 07/06/22 11:41 | 07/12/22 08:55 | 1       |
| 13C9 PFNA                            | 100       |           | 51 - 167 |      |      |   | 07/06/22 11:41 | 07/12/22 08:55 | 1       |
| 13C3 PFHxS                           | 96        |           | 28 - 188 |      |      |   | 07/06/22 11:41 | 07/12/22 08:55 | 1       |
| 13C8 PFOS                            | 87        |           | 51 - 159 |      |      |   | 07/06/22 11:41 | 07/12/22 08:55 | 1       |
| 13C6 PFDA                            | 98        |           | 49 - 163 |      |      |   | 07/06/22 11:41 | 07/12/22 08:55 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88953-1

**Method: 537 IDA - EPA 537 Isotope Dilution**

**Matrix: Water**

**Prep Type: Total/NA**

**Percent Isotope Dilution Recovery (Acceptance Limits)**

| Lab Sample ID       | Client Sample ID       | C4PFHA<br>(31-182) | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
|---------------------|------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 410-88953-1         | 52-47_20220623         | 97                 | 96                 | 100                | 96                 | 87                 | 98                 |
| LCS 410-272712/2-A  | Lab Control Sample     | 92                 | 90                 | 99                 | 85                 | 89                 | 90                 |
| LCSD 410-272712/3-A | Lab Control Sample Dup | 94                 | 94                 | 91                 | 93                 | 91                 | 84                 |
| MB 410-272712/1-A   | Method Blank           | 91                 | 85                 | 105                | 88                 | 91                 | 95                 |

**Surrogate Legend**

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88953-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-272712/1-A**  
**Matrix: Water**  
**Analysis Batch: 274018**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 272712**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 91        |           | 31 - 182 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C8 PFOA        | 85        |           | 48 - 162 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C9 PFNA        | 105       |           | 51 - 167 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C3 PFHxS       | 88        |           | 28 - 188 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C8 PFOS        | 91        |           | 51 - 159 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C6 PFDA        | 95        |           | 49 - 163 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |

**Lab Sample ID: LCS 410-272712/2-A**  
**Matrix: Water**  
**Analysis Batch: 274018**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 272712**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 28.4       |               | ng/L |   | 111  | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 26.6       |               | ng/L |   | 104  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 22.4       |               | ng/L |   | 96   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 24.7       |               | ng/L |   | 104  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 27.0       |               | ng/L |   | 105  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 92        |           | 31 - 182 |
| 13C8 PFOA        | 90        |           | 48 - 162 |
| 13C9 PFNA        | 99        |           | 51 - 167 |
| 13C3 PFHxS       | 85        |           | 28 - 188 |
| 13C8 PFOS        | 89        |           | 51 - 159 |
| 13C6 PFDA        | 90        |           | 49 - 163 |

**Lab Sample ID: LCSD 410-272712/3-A**  
**Matrix: Water**  
**Analysis Batch: 274018**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 272712**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD |       |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-------|
|                                      |             |             |                |      |   |      |             | RPD | Limit |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 25.9        |                | ng/L |   | 101  | 59 - 145    | 4   | 30    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 27.1        |                | ng/L |   | 106  | 51 - 145    | 5   | 30    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 26.9        |                | ng/L |   | 105  | 61 - 139    | 1   | 30    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 23.3        |                | ng/L |   | 100  | 58 - 134    | 4   | 30    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 24.5        |                | ng/L |   | 103  | 45 - 150    | 1   | 30    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 28.1        |                | ng/L |   | 110  | 56 - 138    | 4   | 30    |

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88953-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 94               |                  | 31 - 182      |
| 13C8 PFOA               | 94               |                  | 48 - 162      |
| 13C9 PFNA               | 91               |                  | 51 - 167      |
| 13C3 PFHxS              | 93               |                  | 28 - 188      |
| 13C8 PFOS               | 91               |                  | 51 - 159      |
| 13C6 PFDA               | 84               |                  | 49 - 163      |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88953-1

## LCMS

### Prep Batch: 272712

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-88953-1         | 52-47_20220623         | Total/NA  | Water  | 537 IDA |            |
| MB 410-272712/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-272712/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-272712/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 274018

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-88953-1         | 52-47_20220623         | Total/NA  | Water  | 537 IDA | 272712     |
| MB 410-272712/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 272712     |
| LCS 410-272712/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 272712     |
| LCSD 410-272712/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 272712     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88953-1

**Client Sample ID: 52-47\_20220623**

**Lab Sample ID: 410-88953-1**

**Date Collected: 06/23/22 10:30**

**Matrix: Water**

**Date Received: 06/24/22 11:05**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab  |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 272712       | 07/06/22 11:41       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 274018       | 07/12/22 08:55       | JVK6    | ELLE |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88953-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |



# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88953-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88953-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-88953-1   | 52-47_20220623   | Water  | 06/23/22 10:30 | 06/24/22 11:05 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



Lancaster Laboratories Environmental

Environme



Acct. # 410-88953 Chain of Custody

est/Chain of Custody

|  |  |   |  |  |  |  |  |             |  |   |  |
|--|--|---|--|--|--|--|--|-------------|--|---|--|
| Client: <b>Sanborn Head &amp; Associates</b>   |  | Matrix  |  | Preservation and Filtration Codes  |  |  |  |             |  | For Lab Use Only  |  |
| Project Name/#: N. Monmouth PFAS 5197.01   |  | Site ID #:  |  | <input type="checkbox"/> Tissue<br><input type="checkbox"/> Ground<br><input type="checkbox"/> Surface<br><input type="checkbox"/> Sediment<br><input type="checkbox"/> Foliable<br><input checked="" type="checkbox"/> NPDES<br><input type="checkbox"/> Water<br><input type="checkbox"/> Other: |  |  |  |             |  | SF #:   |  |
| Project Manager: Andrew Buchy  |  | P.O. #: 5197.01   |  |  |  |  |  |             |  | SCR #:  |  |
| Sampler: Don Kelsey  |  | PWSID #:  |  |  |  |  |  |             |  | Preservation Codes  |  |
| Phone #: 603-229-1900  |  | Quote #:  |  |  |  |  |  |             |  | H = HCl      T = Thiosulfate<br>N = HNO <sub>3</sub> B = NaOH<br>S = H <sub>2</sub> SO <sub>4</sub> P = H <sub>3</sub> PO <sub>4</sub><br>F = Field Filtered    O = Other |  |
| State where samples were collected: ME   |  | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>  |  |  |  |  |  |             |  | Remarks   |  |
| Collection   |  | Composite   |  | Total # of Containers  |  | PFAS 537 Mod with isotope dilution (6 compounds) |  |             |  |   |  |
| Date   |  | Time  |  |  |  |  |  |             |  |   |  |
| Sample Identification  |  | Grab  |  | Soil   |  | Water  |  | Other:      |  | Remarks   |  |
| 52-47_20220623   |  | 6/23/2022 10:30   |  | X  |  | X  |  | 2           |  | X   |  |
| Turnaround Time Requested (TAT) (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |  | (Rush TAT is subject to laboratory approval and surcharges.)  |  | Relinquished by: <i>[Signature]</i>  |  | Date: 6/23/22                                    |  | Time: 15:00 |  | Received by:  |  |
| Date results are needed:   |  | Rush results requested by (please check): E-Mail <input checked="" type="checkbox"/> Phone <input type="checkbox"/> |  | Relinquished by:   |  | Date:  |  | Time:       |  | Received by:  |  |
| E-mail Address: <i>ABuchy@SanbornHead.com</i>  |  | Phone:  |  | Relinquished by:   |  | Date:  |  | Time:       |  | Received by:  |  |
| Data Package Options (please check if required)  |  | Level I <input type="checkbox"/> MA MCP <input type="checkbox"/>  |  | Relinquished by:   |  | Date:  |  | Time:       |  | Received by:  |  |
| Level II <input checked="" type="checkbox"/> CT RCP <input type="checkbox"/>   |  | Level VI <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/>   |  | Relinquished by:   |  | Date:  |  | Time:       |  | Received by: <i>J.A.</i>  |  |
| NJ DKQP <input type="checkbox"/> NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B                  |  | EQUS 4-file format/SHA  |  | Relinquished by Commercial Carrier:  |  | Date: 6/24/22                                    |  | Time: 11:05 |  | Temperature upon receipt: <i>4.8</i> °C   |  |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |  | If yes, format: Standard (flat file)  |  | UPS <input type="checkbox"/> FedEx <input checked="" type="checkbox"/> Other <input type="checkbox"/>  |  |  |  |             |  |   |  |



*[Handwritten signature]*

## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-88953-1

**Login Number: 88953**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: Renner, Melissa**

| Question   | Answer | Comment      |
|--|--------|--------------|
| The cooler's custody seal is intact.   | N/A    | Not present  |
| The cooler or samples do not appear to have been compromised or tampered with.             | True   |              |
| Samples were received on ice.  | True   |              |
| Cooler Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen).        | True   |              |
| Cooler Temperature is recorded.  | True   |              |
| WV: Container Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen). | N/A    |              |
| WV: Container Temperature is recorded.   | N/A    |              |
| COC is present.  | True   |              |
| COC is filled out in ink and legible.  | True   |              |
| COC is filled out with all pertinent information.  | True   |              |
| There are no discrepancies between the containers received and the COC.                    | True   |              |
| Sample containers have legible labels.   | True   |              |
| Containers are not broken or leaking.  | True   |              |
| Sample collection date/times are provided.   | True   |              |
| Appropriate sample containers are used.  | True   |              |
| Sample bottles are completely filled.  | True   |              |
| There is sufficient vol. for all requested analyses.                                       | True   |              |
| Is the Field Sampler's name present on COC?  | True   |              |
| Sample custody seals are intact.   | N/A    | Not present. |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?                | N/A    |              |



## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-88952-1

Client Project/Site: N. Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



*Authorized for release by:*  
7/12/2022 7:53:17 PM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.





Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer".

---

Kelly Bauer  
Project Manager  
7/12/2022 7:53:17 PM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 12 |
| Lab Chronicle . . . . .            | 13 |
| Certification Summary . . . . .    | 14 |
| Method Summary . . . . .           | 15 |
| Sample Summary . . . . .           | 16 |
| Chain of Custody . . . . .         | 17 |
| Receipt Checklists . . . . .       | 18 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88952-1

### Qualifiers

#### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| B         | Compound was found in the blank and sample.  |
| cn        | Refer to Case Narrative for further detail   |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| ▫              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88952-1

---

## Job ID: 410-88952-1

---

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

### Narrative

---

#### Job Narrative 410-88952-1

#### Receipt

The samples were received on 6/24/2022 11:05 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.8°C

#### PFAS

Method PFC\_IDA: Target analyte Perfluorooctanesulfonic acid (PFOS) was detected in the field blank sample: FB-01\_20220623 (410-88952-2) . The following action was taken: This sample was re-extracted outside the required holding time and target analyte was not detected in the re-extracted field blank sample.

Method PFC\_IDA: Target analyte Perfluorooctanesulfonic acid (PFOS) was detected in the method blank associated with the following sample: FB-01\_20220623 (410-88952-2). The following action was taken: This sample was re-extracted outside the required holding time and target analyte was not detected in the re-extracted method blank.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88952-1

## Client Sample ID: 52-55\_20220623

Lab Sample ID: 410-88952-1

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 1.8    |           | 1.7 | 0.41 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 8.6    |           | 1.7 | 0.41 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 0.91   | J         | 1.7 | 0.41 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 2.7    |           | 1.7 | 0.41 | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: FB-01\_20220623

Lab Sample ID: 410-88952-2

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 0.61   | J B cn    | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88952-1

**Client Sample ID: 52-55\_20220623**

**Lab Sample ID: 410-88952-1**

Date Collected: 06/23/22 09:15

Matrix: Water

Date Received: 06/24/22 11:05

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 1.8       |           | 1.7      | 0.41 | ng/L |   | 07/06/22 11:41 | 07/12/22 08:44 | 1       |
| Perfluorooctanoic acid (PFOA)        | 8.6       |           | 1.7      | 0.41 | ng/L |   | 07/06/22 11:41 | 07/12/22 08:44 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.7      | 0.41 | ng/L |   | 07/06/22 11:41 | 07/12/22 08:44 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 0.91      | J         | 1.7      | 0.41 | ng/L |   | 07/06/22 11:41 | 07/12/22 08:44 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 2.7       |           | 1.7      | 0.41 | ng/L |   | 07/06/22 11:41 | 07/12/22 08:44 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.7      | 0.41 | ng/L |   | 07/06/22 11:41 | 07/12/22 08:44 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 88        |           | 31 - 182 |      |      |   | 07/06/22 11:41 | 07/12/22 08:44 | 1       |
| 13C8 PFOA                            | 90        |           | 48 - 162 |      |      |   | 07/06/22 11:41 | 07/12/22 08:44 | 1       |
| 13C9 PFNA                            | 96        |           | 51 - 167 |      |      |   | 07/06/22 11:41 | 07/12/22 08:44 | 1       |
| 13C3 PFHxS                           | 92        |           | 28 - 188 |      |      |   | 07/06/22 11:41 | 07/12/22 08:44 | 1       |
| 13C8 PFOS                            | 95        |           | 51 - 159 |      |      |   | 07/06/22 11:41 | 07/12/22 08:44 | 1       |
| 13C6 PFDA                            | 93        |           | 49 - 163 |      |      |   | 07/06/22 11:41 | 07/12/22 08:44 | 1       |

**Client Sample ID: FB-01\_20220623**

**Lab Sample ID: 410-88952-2**

Date Collected: 06/23/22 09:14

Matrix: Water

Date Received: 06/24/22 11:05

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND        |           | 1.7      | 0.42 | ng/L |   | 06/29/22 10:16 | 06/30/22 14:07 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND        |           | 1.7      | 0.42 | ng/L |   | 06/29/22 10:16 | 06/30/22 14:07 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.7      | 0.42 | ng/L |   | 06/29/22 10:16 | 06/30/22 14:07 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |           | 1.7      | 0.42 | ng/L |   | 06/29/22 10:16 | 06/30/22 14:07 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 0.61      | J B cn    | 1.7      | 0.42 | ng/L |   | 06/29/22 10:16 | 06/30/22 14:07 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.7      | 0.42 | ng/L |   | 06/29/22 10:16 | 06/30/22 14:07 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 125       |           | 31 - 182 |      |      |   | 06/29/22 10:16 | 06/30/22 14:07 | 1       |
| 13C8 PFOA                            | 122       |           | 48 - 162 |      |      |   | 06/29/22 10:16 | 06/30/22 14:07 | 1       |
| 13C9 PFNA                            | 129       |           | 51 - 167 |      |      |   | 06/29/22 10:16 | 06/30/22 14:07 | 1       |
| 13C3 PFHxS                           | 127       |           | 28 - 188 |      |      |   | 06/29/22 10:16 | 06/30/22 14:07 | 1       |
| 13C8 PFOS                            | 121       |           | 51 - 159 |      |      |   | 06/29/22 10:16 | 06/30/22 14:07 | 1       |
| 13C6 PFDA                            | 124       |           | 49 - 163 |      |      |   | 06/29/22 10:16 | 06/30/22 14:07 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88952-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID       | Client Sample ID       | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|---------------------|------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                     |                        | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-88952-1         | 52-55_20220623         | 88  | 90                 | 96                 | 92                 | 95                 | 93                 |
| 410-88952-2         | FB-01_20220623         | 125   | 122                | 129                | 127                | 121                | 124                |
| LCS 410-270658/2-A  | Lab Control Sample     | 114   | 120                | 120                | 111                | 118                | 116                |
| LCS 410-272712/2-A  | Lab Control Sample     | 92  | 90                 | 99                 | 85                 | 89                 | 90                 |
| LCSD 410-270658/3-A | Lab Control Sample Dup | 127   | 110                | 127                | 129                | 126                | 127                |
| LCSD 410-272712/3-A | Lab Control Sample Dup | 94  | 94                 | 91                 | 93                 | 91                 | 84                 |
| MB 410-270658/1-A   | Method Blank           | 113   | 110                | 127                | 107                | 104                | 105                |
| MB 410-272712/1-A   | Method Blank           | 91  | 85                 | 105                | 88                 | 91                 | 95                 |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA

# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88952-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-270658/1-A**  
**Matrix: Water**  
**Analysis Batch: 270936**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 270658**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 0.607  | J         | 2.0 | 0.50 | ng/L |   | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/29/22 10:16 | 06/30/22 09:39 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 113       |           | 31 - 182 | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| 13C8 PFOA        | 110       |           | 48 - 162 | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| 13C9 PFNA        | 127       |           | 51 - 167 | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| 13C3 PFHxS       | 107       |           | 28 - 188 | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| 13C8 PFOS        | 104       |           | 51 - 159 | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| 13C6 PFDA        | 105       |           | 49 - 163 | 06/29/22 10:16 | 06/30/22 09:39 | 1       |

**Lab Sample ID: LCS 410-270658/2-A**  
**Matrix: Water**  
**Analysis Batch: 270936**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 270658**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 20.8       |               | ng/L |   | 81   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 22.2       |               | ng/L |   | 87   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 18.8       |               | ng/L |   | 81   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 20.1       |               | ng/L |   | 85   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 22.6       |               | ng/L |   | 88   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 114       |           | 31 - 182 |
| 13C8 PFOA        | 120       |           | 48 - 162 |
| 13C9 PFNA        | 120       |           | 51 - 167 |
| 13C3 PFHxS       | 111       |           | 28 - 188 |
| 13C8 PFOS        | 118       |           | 51 - 159 |
| 13C6 PFDA        | 116       |           | 49 - 163 |

**Lab Sample ID: LCSD 410-270658/3-A**  
**Matrix: Water**  
**Analysis Batch: 270936**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 270658**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-----------|
|                                      |             |             |                |      |   |      |             |     |           |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 25.2        |                | ng/L |   | 98   | 51 - 145    | 19  | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 22.2        |                | ng/L |   | 87   | 61 - 139    | 0   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 18.7        |                | ng/L |   | 80   | 58 - 134    | 0   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 20.4        |                | ng/L |   | 86   | 45 - 150    | 1   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 23.2        |                | ng/L |   | 90   | 56 - 138    | 2   | 30        |



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88952-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| Isotope Dilution | LCSD      |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 127       |           | 31 - 182 |
| 13C8 PFOA        | 110       |           | 48 - 162 |
| 13C9 PFNA        | 127       |           | 51 - 167 |
| 13C3 PFHxS       | 129       |           | 28 - 188 |
| 13C8 PFOS        | 126       |           | 51 - 159 |
| 13C6 PFDA        | 127       |           | 49 - 163 |

**Lab Sample ID: MB 410-272712/1-A**  
**Matrix: Water**  
**Analysis Batch: 274018**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 272712**

| Analyte                              | MB MB  |           | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |

| Isotope Dilution | MB MB     |           | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 91        |           | 31 - 182 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C8 PFOA        | 85        |           | 48 - 162 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C9 PFNA        | 105       |           | 51 - 167 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C3 PFHxS       | 88        |           | 28 - 188 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C8 PFOS        | 91        |           | 51 - 159 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C6 PFDA        | 95        |           | 49 - 163 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |

**Lab Sample ID: LCS 410-272712/2-A**  
**Matrix: Water**  
**Analysis Batch: 274018**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 272712**

| Analyte                              | Spike Added | LCS    |           | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|
|                                      |             | Result | Qualifier |      |   |      |             |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 24.9   |           | ng/L |   | 97   | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 28.4   |           | ng/L |   | 111  | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 26.6   |           | ng/L |   | 104  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 22.4   |           | ng/L |   | 96   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 24.7   |           | ng/L |   | 104  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 27.0   |           | ng/L |   | 105  | 56 - 138    |

| Isotope Dilution | LCS       |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 92        |           | 31 - 182 |
| 13C8 PFOA        | 90        |           | 48 - 162 |
| 13C9 PFNA        | 99        |           | 51 - 167 |
| 13C3 PFHxS       | 85        |           | 28 - 188 |
| 13C8 PFOS        | 89        |           | 51 - 159 |
| 13C6 PFDA        | 90        |           | 49 - 163 |

# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88952-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCSD 410-272712/3-A

Matrix: Water

Analysis Batch: 274018

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 272712

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec     |     | RPD | Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|----------|-----|-----|-------|
|                                      |             |             |                |      |   |      | Limits   | RPD |     |       |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 25.9        |                | ng/L |   | 101  | 59 - 145 | 4   | 30  |       |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 27.1        |                | ng/L |   | 106  | 51 - 145 | 5   | 30  |       |
| Perfluorononanoic acid (PFNA)        | 25.6        | 26.9        |                | ng/L |   | 105  | 61 - 139 | 1   | 30  |       |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 23.3        |                | ng/L |   | 100  | 58 - 134 | 4   | 30  |       |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 24.5        |                | ng/L |   | 103  | 45 - 150 | 1   | 30  |       |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 28.1        |                | ng/L |   | 110  | 56 - 138 | 4   | 30  |       |

| Isotope Dilution | LCSD      |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 94        |           | 31 - 182 |
| 13C8 PFOA        | 94        |           | 48 - 162 |
| 13C9 PFNA        | 91        |           | 51 - 167 |
| 13C3 PFHxS       | 93        |           | 28 - 188 |
| 13C8 PFOS        | 91        |           | 51 - 159 |
| 13C6 PFDA        | 84        |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88952-1

## LCMS

### Prep Batch: 270658

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-88952-2         | FB-01_20220623         | Total/NA  | Water  | 537 IDA |            |
| MB 410-270658/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-270658/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-270658/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 270936

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-88952-2         | FB-01_20220623         | Total/NA  | Water  | 537 IDA | 270658     |
| MB 410-270658/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 270658     |
| LCS 410-270658/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 270658     |
| LCSD 410-270658/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 270658     |

### Prep Batch: 272712

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-88952-1         | 52-55_20220623         | Total/NA  | Water  | 537 IDA |            |
| MB 410-272712/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-272712/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-272712/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Prep Batch: 273883

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-88952-2 - RE   | FB-01_20220623     | Total/NA  | Water  | 537 IDA |            |
| MB 410-273883/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-273883/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 274018

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-88952-1         | 52-55_20220623         | Total/NA  | Water  | 537 IDA | 272712     |
| 410-88952-2 - RE    | FB-01_20220623         | Total/NA  | Water  | 537 IDA | 273883     |
| MB 410-272712/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 272712     |
| MB 410-273883/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 273883     |
| LCS 410-272712/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 272712     |
| LCS 410-273883/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 273883     |
| LCSD 410-272712/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 272712     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88952-1

**Client Sample ID: 52-55\_20220623**

**Lab Sample ID: 410-88952-1**

Date Collected: 06/23/22 09:15

Matrix: Water

Date Received: 06/24/22 11:05

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab  |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 272712       | 07/06/22 11:41       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 274018       | 07/12/22 08:44       | JVK6    | ELLE |

**Client Sample ID: FB-01\_20220623**

**Lab Sample ID: 410-88952-2**

Date Collected: 06/23/22 09:14

Matrix: Water

Date Received: 06/24/22 11:05

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab  |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 270658       | 06/29/22 10:16       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 270936       | 06/30/22 14:07       | JVK6    | ELLE |
| Total/NA  | Prep       | 537 IDA      | RE  |                 | 273883       | 07/10/22 12:12       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      | RE  | 1               | 274018       | 07/12/22 04:06       | JVK6    | ELLE |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88952-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88952-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88952-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-88952-1   | 52-55_20220623   | Water  | 06/23/22 09:15 | 06/24/22 11:05 |
| 410-88952-2   | FB-01_20220623   | Water  | 06/23/22 09:14 | 06/24/22 11:05 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# Environmental



# Chain of Custody



Lancaster Laboratories  
Environmental

Acct. # \_\_\_\_\_

410-88952 Chain of Custody

|   |  |  |  |   |  |   |  |                                       |  |   |  |                         |  |   |  |
|---|--|--|--|---|--|---|--|---------------------------------------|--|---|--|-------------------------|--|---|--|
| Client: <b>Sanborn Head &amp; Associates</b>  |  |  |  | <b>Matrix</b>   |  |   |  | <b>Analyses requested</b>             |  |   |  | <b>For Lab Use Only</b> |  |   |  |
| Project Name#: N. Monmouth PFAS 5197.01   |  | Site ID #:   |  | <input type="checkbox"/> Tissue                                 |  | <input type="checkbox"/> Ground                 |  | <input type="checkbox"/> Surface      |  | Preservation and Filtration Codes                   |  |                         |  | SF #: _____   |  |
| Project Manager: Andrew Buchy   |  | P.O. #: 5197.01  |  | <input type="checkbox"/> Sediment                               |  | <input type="checkbox"/> Potable                |  | <input type="checkbox"/> NPDES        |  | PFAS 537 Mod with isotope dilution<br>(6 compounds) |  |                         |  | SCR #: _____  |  |
| Sampler: Don Kelsey   |  | PWSID #:   |  | <input type="checkbox"/> Soil                                   |  | <input type="checkbox"/> Water                  |  | <input type="checkbox"/> Other: _____ |  |   |  |                         |  |   |  |
| Phone #: 603-229-1900   |  | Quote #:   |  | <input type="checkbox"/> Composite                              |  | <input checked="" type="checkbox"/> Field Blank |  | Total # of Containers                 |  | Remarks   |  |                         |  | Preservation Codes<br>H = HCl      T = Thiosulfate<br>N = HNO <sub>3</sub> B = NaOH<br>S = H <sub>2</sub> SO <sub>4</sub> P = H <sub>3</sub> PO <sub>4</sub><br>F = Field Filtered      O = Other |  |
| State where samples were collected: ME  |  | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>   |  | Collection  |  | Date  |  | Time                                  |  |   |  |                         |  | Grab  |  |
| Sample Identification   |  | 52-55_20220623   |  | 6/23/2022   |  | 09:15   |  | X                                     |  | X   |  | 2                       |  | X   |  |
|   |  | FB-01_20220623   |  | 6/23/2022   |  | 09:14   |  | X                                     |  | X   |  | 2                       |  | X   |  |
| Turnaround Time Requested (TAT) (please check):   |  | Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |  | Relinquished by:  |  | Date  |  | Time                                  |  | Received by:  |  | Date                    |  | Time  |  |
| (Rush TAT is subject to laboratory approval and surcharges.)  |  |  |  | <i>[Signature]</i>  |  | 6/23/22   |  | 15:00                                 |  |   |  |                         |  |   |  |
| Date results are needed:  |  | Rush results requested by (please check):                                  |  | Relinquished by:  |  | Date  |  | Time                                  |  | Received by:  |  | Date                    |  | Time  |  |
|   |  | E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>             |  |   |  |   |  |                                       |  |   |  |                         |  |   |  |
| E-mail Address:   |  | Relinquished by:   |  | Date  |  | Time  |  | Received by:                          |  | Date  |  | Time                    |  |   |  |
| Phone:  |  |  |  |   |  |   |  |                                       |  |   |  |                         |  |   |  |
| Data Package Options (please check if required)   |  | Relinquished by:   |  | Date  |  | Time  |  | Received by:                          |  | Date  |  | Time                    |  |   |  |
| Level I <input type="checkbox"/> MA MCP <input type="checkbox"/>  |  |  |  |   |  |   |  |                                       |  |   |  |                         |  |   |  |
| Level II <input checked="" type="checkbox"/> CT RCP <input type="checkbox"/>                              |  | Relinquished by:   |  | Date  |  | Time  |  | Received by:                          |  | Date  |  | Time                    |  |   |  |
| Level VI <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/>                                     |  |  |  |   |  |   |  |                                       |  | 7/11/22   |  | 11:05                   |  |   |  |
| NJ DKQP <input type="checkbox"/> NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B |  | Relinquished by Commercial Carrier:  |  |   |  |   |  |                                       |  |   |  |                         |  |   |  |
| EQUS 4-file format/SHA  |  | Temperature upon receipt   |  | 4.8   |  | °C  |  |                                       |  |   |  |                         |  |   |  |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                         |  | If yes, format: Standard (flat file)                                       |  | UPS _____ FedEx <input checked="" type="checkbox"/> Other _____ |  |   |  |                                       |  |   |  |                         |  |   |  |





## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-88952-1

**Login Number: 88952**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: Renner, Melissa**

| Question   | Answer | Comment      |
|--|--------|--------------|
| The cooler's custody seal is intact.   | N/A    | Not present  |
| The cooler or samples do not appear to have been compromised or tampered with.             | True   |              |
| Samples were received on ice.  | True   |              |
| Cooler Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen).        | True   |              |
| Cooler Temperature is recorded.  | True   |              |
| WV: Container Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen). | N/A    |              |
| WV: Container Temperature is recorded.   | N/A    |              |
| COC is present.  | True   |              |
| COC is filled out in ink and legible.  | True   |              |
| COC is filled out with all pertinent information.  | True   |              |
| There are no discrepancies between the containers received and the COC.                    | True   |              |
| Sample containers have legible labels.   | True   |              |
| Containers are not broken or leaking.  | True   |              |
| Sample collection date/times are provided.   | True   |              |
| Appropriate sample containers are used.  | True   |              |
| Sample bottles are completely filled.  | True   |              |
| There is sufficient vol. for all requested analyses.                                       | True   |              |
| Is the Field Sampler's name present on COC?  | True   |              |
| Sample custody seals are intact.   | N/A    | Not present. |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?                | N/A    |              |



 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 2/2/2023 12:17:39 PM

**JOB DESCRIPTION**

N Monmouth PFAS 5197.01

**JOB NUMBER**

410-112198-1

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
2/2/2023 12:17:39 PM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 9  |
| QC Sample Results . . . . .        | 10 |
| QC Association Summary . . . . .   | 12 |
| Lab Chronicle . . . . .            | 13 |
| Certification Summary . . . . .    | 14 |
| Method Summary . . . . .           | 15 |
| Sample Summary . . . . .           | 16 |
| Chain of Custody . . . . .         | 17 |
| Receipt Checklists . . . . .       | 18 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112198-1

### Qualifiers

#### LCMS

| Qualifier | Qualifier Description                                     |
|-----------|---|
| I         | Value is EMPC (estimated maximum possible concentration). |

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112198-1

---

**Job ID: 410-112198-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative  
410-112198-1**

**Receipt**

The sample was received on 1/13/2023 9:50 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.7°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112198-1

Client Sample ID: 52-76\_20230112

Lab Sample ID: 410-112198-1

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 7.3    |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 34     |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 2.1    |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 4.2    | I         | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC





# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112198-1

**Client Sample ID: 52-76\_20230112**

**Lab Sample ID: 410-112198-1**

Date Collected: 01/12/23 13:05

Matrix: Water

Date Received: 01/13/23 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 7.3    |           | 1.6 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:11 | 1       |
| Perfluorooctanoic acid (PFOA)        | 34     |           | 1.6 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:11 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.6   |           | 1.6 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:11 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 2.1    |           | 1.6 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:11 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 4.2    | I         | 1.6 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:11 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.6   |           | 1.6 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:11 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 84        |           | 31 - 182 | 01/26/23 07:18 | 01/28/23 23:11 | 1       |
| 13C8 PFOA        | 73        |           | 48 - 162 | 01/26/23 07:18 | 01/28/23 23:11 | 1       |
| 13C9 PFNA        | 80        |           | 51 - 167 | 01/26/23 07:18 | 01/28/23 23:11 | 1       |
| 13C3 PFHxS       | 86        |           | 28 - 188 | 01/26/23 07:18 | 01/28/23 23:11 | 1       |
| 13C8 PFOS        | 90        |           | 51 - 159 | 01/26/23 07:18 | 01/28/23 23:11 | 1       |
| 13C6 PFDA        | 82        |           | 49 - 163 | 01/26/23 07:18 | 01/28/23 23:11 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112198-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID       | Client Sample ID       | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|---------------------|------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                     |                        | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-112198-1        | 52-76_20230112         | 84  | 73                 | 80                 | 86                 | 90                 | 82                 |
| LCS 410-338788/3-A  | Lab Control Sample     | 85  | 75                 | 86                 | 82                 | 89                 | 84                 |
| LCSD 410-338788/4-A | Lab Control Sample Dup | 91  | 87                 | 102                | 93                 | 106                | 91                 |
| MB 410-338788/1-A   | Method Blank           | 77  | 71                 | 92                 | 77                 | 81                 | 72                 |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112198-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-338788/1-A**  
**Matrix: Water**  
**Analysis Batch: 339461**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 338788**

| Analyte                              | MB     | MB        | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |     |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | <2.0   |           | 2.0 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0   |           | 2.0 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0   |           | 2.0 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 21:42 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 77        |           | 31 - 182 | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| 13C8 PFOA        | 71        |           | 48 - 162 | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| 13C9 PFNA        | 92        |           | 51 - 167 | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| 13C3 PFHxS       | 77        |           | 28 - 188 | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| 13C8 PFOS        | 81        |           | 51 - 159 | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| 13C6 PFDA        | 72        |           | 49 - 163 | 01/26/23 07:18 | 01/28/23 21:42 | 1       |

**Lab Sample ID: LCS 410-338788/3-A**  
**Matrix: Water**  
**Analysis Batch: 339461**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 338788**

| Analyte                              | Spike Added | LCS    | LCS       | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|
|                                      |             | Result | Qualifier |      |   |      |             |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 27.8   |           | ng/L |   | 109  | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 33.6   |           | ng/L |   | 131  | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 30.2   |           | ng/L |   | 118  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 26.2   |           | ng/L |   | 112  | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 27.9   |           | ng/L |   | 118  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 29.1   |           | ng/L |   | 114  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 85        |           | 31 - 182 |
| 13C8 PFOA        | 75        |           | 48 - 162 |
| 13C9 PFNA        | 86        |           | 51 - 167 |
| 13C3 PFHxS       | 82        |           | 28 - 188 |
| 13C8 PFOS        | 89        |           | 51 - 159 |
| 13C6 PFDA        | 84        |           | 49 - 163 |

**Lab Sample ID: LCSD 410-338788/4-A**  
**Matrix: Water**  
**Analysis Batch: 339461**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 338788**

| Analyte                              | Spike Added | LCSD   | LCSD      | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|-----|-----------|
|                                      |             | Result | Qualifier |      |   |      |             |     |           |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 32.9   |           | ng/L |   | 128  | 59 - 145    | 17  | 30        |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 35.1   |           | ng/L |   | 137  | 51 - 145    | 4   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 30.0   |           | ng/L |   | 117  | 61 - 139    | 1   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 27.6   |           | ng/L |   | 118  | 58 - 134    | 5   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 27.7   |           | ng/L |   | 117  | 45 - 150    | 1   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 24.6   |           | ng/L |   | 96   | 56 - 138    | 17  | 30        |

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112198-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 91               |                  | 31 - 182      |
| 13C8 PFOA               | 87               |                  | 48 - 162      |
| 13C9 PFNA               | 102              |                  | 51 - 167      |
| 13C3 PFHxS              | 93               |                  | 28 - 188      |
| 13C8 PFOS               | 106              |                  | 51 - 159      |
| 13C6 PFDA               | 91               |                  | 49 - 163      |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112198-1

## LCMS

### Prep Batch: 338788

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-112198-1        | 52-76_20230112         | Total/NA  | Water  | 537 IDA |            |
| MB 410-338788/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-338788/3-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-338788/4-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 339461

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-112198-1        | 52-76_20230112         | Total/NA  | Water  | 537 IDA | 338788     |
| MB 410-338788/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 338788     |
| LCS 410-338788/3-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 338788     |
| LCSD 410-338788/4-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 338788     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112198-1

**Client Sample ID: 52-76\_20230112**

**Lab Sample ID: 410-112198-1**

**Date Collected: 01/12/23 13:05**

**Matrix: Water**

**Date Received: 01/13/23 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 338788       | M4QQ          | ELLE | 01/26/23 07:18       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 339461       | JVK6          | ELLE | 01/28/23 23:11       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112198-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112198-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300





# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112198-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-112198-1  | 52-76_20230112   | Water  | 01/12/23 13:05 | 01/13/23 09:50 |

1

2

3

4

5

6

7

8

9

10

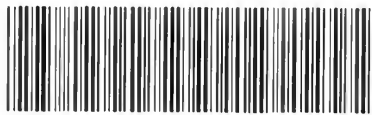
11

12

13

14

15



# Environmental Analysis Request/Chain of Custody

410-112198 Chain of Custody

Acct. # \_\_\_\_\_ Group # \_\_\_\_\_ Sample # \_\_\_\_\_

| Client: <b>Sanborn Head &amp; Associates</b>  |  |  |              | Matrix  |                                     |                          |  | Analyses Requested                     |                       |                                     |  | For Lab Use Only |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|---|--|--|--------------|---|-------------------------------------|--------------------------|--|--|-----------------------|-------------------------------------|--|------------------|------------------------------------|----------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--------------|--|
| Project Name/#: <b>N. Monmouth PFAS 5197.01</b>   |  | Site ID #:   |              | <input type="checkbox"/>  | <input type="checkbox"/>            | <input type="checkbox"/> | Preservation and Filtration Codes  |  |                       |                                     | SF #: _____                                      |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
| Project Manager: <b>Andrew Buchy</b>  |  | P.O. #: <b>5197.01</b>   |              | <input type="checkbox"/>  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <table border="1"> <tr><td colspan="4">PFAS 537 Mod with isotope dilution (6 compounds)</td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> </table> |  |                       |                                     | PFAS 537 Mod with isotope dilution (6 compounds) |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | SCR #: _____ |  |
| PFAS 537 Mod with isotope dilution (6 compounds)  |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|   |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|   |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|   |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|   |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|   |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|   |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|   |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|   |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|   |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
| Sampler: <b>Don Kelsey</b>  |  | PWSID #:   |              | <input type="checkbox"/>  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Preservation Codes   |  | H = HCl               |                                     | T = Thiosulfate                                  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
| Phone #: <b>603-229-1900</b>  |  | Quote #:   |              | <input type="checkbox"/>  | <input type="checkbox"/>            | <input type="checkbox"/> | N = HNO <sub>3</sub>   |  | B = NaOH              |                                     | S = H <sub>2</sub> SO <sub>4</sub>               |                  | P = H <sub>3</sub> PO <sub>4</sub> |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
| State where samples were collected: <b>ME</b>   |  | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/> |              | <input type="checkbox"/>  | <input type="checkbox"/>            | <input type="checkbox"/> | F = Field Filtered   |  | O = Other             |                                     | Remarks  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
| Sample Identification   |  | Date   | Time         | Grab  | Composite                           | Soil                     | Water  | Other:                                 | Total # of Containers |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
| <b>52-76-2023012</b>  |  | <b>1/12/23</b>   | <b>13:05</b> | <input checked="" type="checkbox"/>                             |                                     |                          | <input checked="" type="checkbox"/>  |  | <b>2</b>              | <input checked="" type="checkbox"/> |  |                  |                                    | <b>Report to RL (no J-flags)</b> |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|   |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|   |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|   |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|   |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|   |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|   |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|   |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|   |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
|   |  |  |              |   |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
| Turnaround Time Requested (TAT) (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/><br>(Rush TAT is subject to laboratory approval and surcharges)       |  |  |              | Relinquished by: <b>Dalb</b>                                    |                                     | Date: <b>1/12/23</b>     | Time: <b>16:00</b>   | Received by:                           |                       | Date:                               | Time:  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
| Date results are needed:  |  |  |              | Relinquished by:  |                                     | Date:                    | Time:  | Received by:                           |                       | Date:                               | Time:  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
| Rush results requested by (please check): E-Mail <input checked="" type="checkbox"/> Phone <input type="checkbox"/><br>E-mail Address: <b>A.BUCHY@SANBORNHEAD.COM</b>                           |  |  |              | Relinquished by:  |                                     | Date:                    | Time:  | Received by:                           |                       | Date:                               | Time:  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
| Data Package Options (please check if required)   |  |  |              | Relinquished by:  |                                     | Date:                    | Time:  | Received by:                           |                       | Date:                               | Time:  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
| Level I <input type="checkbox"/> MA MCP <input type="checkbox"/>  |  |  |              | Relinquished by:  |                                     | Date:                    | Time:  | Received by:                           |                       | Date:                               | Time:  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
| Level II <input checked="" type="checkbox"/> CT RCP <input type="checkbox"/>  |  |  |              | Relinquished by:  |                                     | Date:                    | Time:  | Received by: <b>MMP</b>                |                       | Date: <b>1/13/23</b>                | Time: <b>0950</b>                                |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
| Level VI <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/>   |  |  |              | Relinquished by:  |                                     | Date:                    | Time:  | Received by:                           |                       | Date:                               | Time:  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
| NJ DKQP <input type="checkbox"/> NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B   |  |  |              | Relinquished by Commercial Carrier:                             |                                     |                          |  | Temperature upon receipt <b>2.7</b> °C |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, format: <input type="checkbox"/> Standard (flat file) <input type="checkbox"/> EQUS 4-file format/SHA |  |  |              | UPS _____ FedEx <input checked="" type="checkbox"/> Other _____ |                                     |                          |  |  |                       |                                     |  |                  |                                    |                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |  |

## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-112198-1

**Login Number: 112198**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: Ballard, Megan**

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |



## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-85998-2  
Client Project/Site: PFAS in Groundwater

For:  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



Authorized for release by:  
6/14/2022 12:37:39 AM

Kelly Bauer, Project Manager  
(717)556-7262  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Handwritten signature of Kelly Bauer in black ink.

---

Kelly Bauer  
Project Manager  
6/14/2022 12:37:39 AM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 8  |
| QC Sample Results . . . . .        | 9  |
| QC Association Summary . . . . .   | 10 |
| Lab Chronicle . . . . .            | 11 |
| Certification Summary . . . . .    | 12 |
| Method Summary . . . . .           | 13 |
| Sample Summary . . . . .           | 14 |
| Chain of Custody . . . . .         | 15 |
| Receipt Checklists . . . . .       | 16 |

# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-2

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| B         | Compound was found in the blank and sample.  |
| cn        | Refer to Case Narrative for further detail   |
| I         | Value is EMPC (estimated maximum possible concentration).  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-2

---

**Job ID: 410-85998-2**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative  
410-85998-2**

**Receipt**

The samples were received on 6/2/2022 10:23 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.5°C

**PFAS**

Method PFC\_IDA: Target analyte(s) were detected in the method blank associated with the following sample: 52-79\_20220601 (410-85998-2). Since the result in the sample is >10X the result in the method blank, the data is reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.





# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-2

**Client Sample ID: 52-79\_20220601**

**Lab Sample ID: 410-85998-2**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 15     | B cn      | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 88     | cn        | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorononanoic acid (PFNA)        | 0.79   | J cn      | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 5.9    | cn        | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 65     | B cn      | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |

**Client Sample ID: FB-01\_20220601**

**Lab Sample ID: 410-85998-6**

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: PFAS in Groundwater

Job ID: 410-85998-2

**Client Sample ID: 52-79\_20220601**

**Lab Sample ID: 410-85998-2**

Date Collected: 06/01/22 11:55

Matrix: Water

Date Received: 06/02/22 10:23

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 15        | B cn      | 1.6      | 0.40 | ng/L |   | 06/11/22 01:39 | 06/13/22 16:19 | 1       |
| Perfluorooctanoic acid (PFOA)        | 88        | cn        | 1.6      | 0.40 | ng/L |   | 06/11/22 01:39 | 06/13/22 16:19 | 1       |
| Perfluorononanoic acid (PFNA)        | 0.79      | J cn      | 1.6      | 0.40 | ng/L |   | 06/11/22 01:39 | 06/13/22 16:19 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 5.9       | cn        | 1.6      | 0.40 | ng/L |   | 06/11/22 01:39 | 06/13/22 16:19 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 65        | B cn      | 1.6      | 0.40 | ng/L |   | 06/11/22 01:39 | 06/13/22 16:19 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        | cn        | 1.6      | 0.40 | ng/L |   | 06/11/22 01:39 | 06/13/22 16:19 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 85        | cn        | 31 - 182 |      |      |   | 06/11/22 01:39 | 06/13/22 16:19 | 1       |
| 13C8 PFOA                            | 84        | cn        | 48 - 162 |      |      |   | 06/11/22 01:39 | 06/13/22 16:19 | 1       |
| 13C9 PFNA                            | 85        | cn        | 51 - 167 |      |      |   | 06/11/22 01:39 | 06/13/22 16:19 | 1       |
| 13C3 PFHxS                           | 100       | cn        | 28 - 188 |      |      |   | 06/11/22 01:39 | 06/13/22 16:19 | 1       |
| 13C8 PFOS                            | 88        | cn        | 51 - 159 |      |      |   | 06/11/22 01:39 | 06/13/22 16:19 | 1       |
| 13C6 PFDA                            | 86        | cn        | 49 - 163 |      |      |   | 06/11/22 01:39 | 06/13/22 16:19 | 1       |

**Client Sample ID: FB-01\_20220601**

**Lab Sample ID: 410-85998-6**

Date Collected: 06/01/22 12:00

Matrix: Water

Date Received: 06/02/22 10:23

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND        |           | 1.6      | 0.41 | ng/L |   | 06/11/22 01:39 | 06/13/22 17:03 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 06/11/22 01:39 | 06/13/22 17:03 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 06/11/22 01:39 | 06/13/22 17:03 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |           | 1.6      | 0.41 | ng/L |   | 06/11/22 01:39 | 06/13/22 17:03 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND        |           | 1.6      | 0.41 | ng/L |   | 06/11/22 01:39 | 06/13/22 17:03 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 06/11/22 01:39 | 06/13/22 17:03 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 89        |           | 31 - 182 |      |      |   | 06/11/22 01:39 | 06/13/22 17:03 | 1       |
| 13C8 PFOA                            | 89        |           | 48 - 162 |      |      |   | 06/11/22 01:39 | 06/13/22 17:03 | 1       |
| 13C9 PFNA                            | 88        |           | 51 - 167 |      |      |   | 06/11/22 01:39 | 06/13/22 17:03 | 1       |
| 13C3 PFHxS                           | 94        |           | 28 - 188 |      |      |   | 06/11/22 01:39 | 06/13/22 17:03 | 1       |
| 13C8 PFOS                            | 88        |           | 51 - 159 |      |      |   | 06/11/22 01:39 | 06/13/22 17:03 | 1       |
| 13C6 PFDA                            | 89        |           | 49 - 163 |      |      |   | 06/11/22 01:39 | 06/13/22 17:03 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: PFAS in Groundwater

Job ID: 410-85998-2

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID   | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|--------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                    | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-85998-2        | 52-79_20220601     | 85 cn   | 84 cn              | 85 cn              | 100 cn             | 88 cn              | 86 cn              |
| 410-85998-6        | FB-01_20220601     | 89  | 89                 | 88                 | 94                 | 88                 | 89                 |
| LCS 410-264473/2-A | Lab Control Sample | 94  | 95                 | 101                | 99                 | 99                 | 100                |
| MB 410-264473/1-A  | Method Blank       | 88  | 90                 | 94                 | 94                 | 93                 | 90                 |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: PFAS in Groundwater

Job ID: 410-85998-2

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-264473/1-A**  
**Matrix: Water**  
**Analysis Batch: 264736**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 264473**

| Analyte                              | MB MB  |           | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | 0.911  | J I       | 2.0 | 0.50 | ng/L |   | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 0.527  | J         | 2.0 | 0.50 | ng/L |   | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/11/22 01:39 | 06/13/22 15:23 | 1       |

| Isotope Dilution | MB MB     |           | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 88        |           | 31 - 182 | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| 13C8 PFOA        | 90        |           | 48 - 162 | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| 13C9 PFNA        | 94        |           | 51 - 167 | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| 13C3 PFHxS       | 94        |           | 28 - 188 | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| 13C8 PFOS        | 93        |           | 51 - 159 | 06/11/22 01:39 | 06/13/22 15:23 | 1       |
| 13C6 PFDA        | 90        |           | 49 - 163 | 06/11/22 01:39 | 06/13/22 15:23 | 1       |

**Lab Sample ID: LCS 410-264473/2-A**  
**Matrix: Water**  
**Analysis Batch: 264736**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 264473**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 24.3       |               | ng/L |   | 95   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 22.6       |               | ng/L |   | 88   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 21.6       |               | ng/L |   | 92   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 22.4       |               | ng/L |   | 95   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 23.9       |               | ng/L |   | 93   | 56 - 138    |

| Isotope Dilution | LCS LCS   |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 94        |           | 31 - 182 |
| 13C8 PFOA        | 95        |           | 48 - 162 |
| 13C9 PFNA        | 101       |           | 51 - 167 |
| 13C3 PFHxS       | 99        |           | 28 - 188 |
| 13C8 PFOS        | 99        |           | 51 - 159 |
| 13C6 PFDA        | 100       |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-2

## LCMS

### Prep Batch: 264473

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-85998-2        | 52-79_20220601     | Total/NA  | Water  | 537 IDA |            |
| 410-85998-6        | FB-01_20220601     | Total/NA  | Water  | 537 IDA |            |
| MB 410-264473/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-264473/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 264736

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-85998-2        | 52-79_20220601     | Total/NA  | Water  | 537 IDA | 264473     |
| 410-85998-6        | FB-01_20220601     | Total/NA  | Water  | 537 IDA | 264473     |
| MB 410-264473/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 264473     |
| LCS 410-264473/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 264473     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-2

**Client Sample ID: 52-79\_20220601**

**Lab Sample ID: 410-85998-2**

Date Collected: 06/01/22 11:55

Matrix: Water

Date Received: 06/02/22 10:23

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab  |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 264473       | 06/11/22 01:39       | ZWK6    | ELLE |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 264736       | 06/13/22 16:19       | ZG8V    | ELLE |

**Client Sample ID: FB-01\_20220601**

**Lab Sample ID: 410-85998-6**

Date Collected: 06/01/22 12:00

Matrix: Water

Date Received: 06/02/22 10:23

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab  |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 264473       | 06/11/22 01:39       | ZWK6    | ELLE |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 264736       | 06/13/22 17:03       | ZG8V    | ELLE |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-2

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |



# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-2

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300





# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: PFAS in Groundwater

Job ID: 410-85998-2

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 410-85998-2   | 52-79_20220601   | Water  | 06/01/22 11:55 | 06/02/22 10:23 |
| 410-85998-6   | FB-01_20220601   | Water  | 06/01/22 12:00 | 06/02/22 10:23 |

1

2

3

4

5

6

7

8

9

10

11

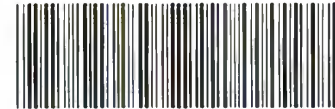
12

13

14

15

**Chain of Custody Record**



410-85998 Chain of Custody

|  |  |  |  |   |  |  |  |                                     |  |                            |  |
|--|--|--|--|---|--|--|--|-------------------------------------|--|----------------------------|--|
| <b>Client Information</b>  |  | Sampler: <u>D. Kessler / C. Yigora</u>                                       |  | Lab PM: Bauer, Kelly  |  | COC No: 410-57598-16397.1  |  |                                     |  |                            |  |
| Client Contact: Shana Whitney  |  | Phone: <u>603.312.4876</u>   |  | E-Mail: Kelly.Bauer@eLeurofinsus.com                        |  | Page: Page 1 of 1  |  |                                     |  |                            |  |
| Company: Sanborn Head & Associates Inc   |  | PWSID:   |  | <b>Analysis Requested</b>                                   |  | Job #: <u>5197.01</u>  |  |                                     |  |                            |  |
| Address: 20 Foundry Street   |  | Due Date Requested:  |  | Field Filtered Sample (Yes or No)<br>PFC_IDA - UCMR3 & PFAS |  | Total Number of Containers   |  |                                     |  |                            |  |
| City: Concord  |  | TAT Requested (days):  |  |   |  |  |  |                                     |  |                            |  |
| State, Zip: NH, 03301  |  | Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No |  |   |  |  |  |                                     |  |                            |  |
| Phone: <u>603-229-1900</u>   |  | PO #: Purchase Order Requested   |  |   |  |  |  |                                     |  |                            |  |
| Email: SWhitney@sanbornhead.com  |  | WO #:  |  |   |  |  |  |                                     |  |                            |  |
| Project Name: PFAS in Groundwater  |  | Project #: 41010916  |  |   |  | Preservation Codes:<br>A - HCL M - Hexane<br>B - NaOH N - None<br>C - Zn Acetate O - AsNaO2<br>D - Nitric Acid P - Na2O4S<br>E - NaHSO4 R - Na2S2O3<br>F - MeOH S - H2SO4<br>G - Amchlor T - TSP Dodecahydrate<br>H - Ascorbic Acid U - Acetone<br>I - Ice V - MCAA<br>J - DI Water W - pH 4-5<br>K - EDTA Y - Trizma<br>L - EDA Z - other (specify) |  |                                     |  |                            |  |
| Site: <u>5197.01</u>   |  | SSOW#:   |  |   |  | Other:   |  |                                     |  |                            |  |
| <b>Sample Identification</b>   |  | Sample Date  |  | Sample Time   |  | Sample Type (C=comp, G=grab)   |  | Matrix (Water, Solid, Tissue, A=As) |  | Special Instructions/Note: |  |
| <u>52-1-20220601</u>   |  | <u>6/1/22</u>  |  | <u>13:26</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |
| <u>52-79-20220601</u>  |  |  |  | <u>11:55</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |
| <u>52-45-20220601</u>  |  |  |  | <u>11:04</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |
| <u>52-10-20220601</u>  |  |  |  | <u>10:25</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |
| <u>40-18-20220601</u>  |  |  |  | <u>9:55</u>   |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |
| <u>FB-01-20220601</u>  |  | <u>6/1/22</u>  |  | <u>12:00</u>  |  | <u>G</u>   |  | <u>Water</u>                        |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |
|  |  |  |  |   |  |  |  | <u>Water</u>                        |  |                            |  |
| <b>Possible Hazard Identification</b>  |  |  |  |   |  | <b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>  |  |                                     |  |                            |  |
| <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological |  |  |  |   |  | <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months   |  |                                     |  |                            |  |
| Deliverable Requested: I, II, III, IV, Other (specify)   |  |  |  |   |  | Special Instructions/QC Requirements:  |  |                                     |  |                            |  |
| Empty Kit Relinquished by:   |  | Date:  |  | Time:   |  | Method of Shipment:  |  |                                     |  |                            |  |
| Relinquished by: <u>[Signature]</u>  |  | Date/Time: <u>5/25/22 13:30</u>  |  | Company: <u>EPINS SHA</u>                                   |  | Received by: <u>[Signature]</u>  |  | Date/Time: <u>5/31/22</u>           |  | Company: <u>SHA</u>        |  |
| Relinquished by: <u>[Signature]</u>  |  | Date/Time: <u>6/1/22 16:50</u>   |  | Company: <u>SHA</u>   |  | Received by: _____   |  | Date/Time: _____                    |  | Company: _____             |  |
| Relinquished by: _____   |  | Date/Time: _____   |  | Company: _____  |  | Received by: <u>[Signature]</u>  |  | Date/Time: <u>6-2-22 10:23</u>      |  | Company: <u>ELLET</u>      |  |
| Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No   |  | Custody Seal No.: <u>141112</u>  |  | Cooler Temperature(s) °C and Other Remarks: <u>3.5</u>      |  |  |  |                                     |  |                            |  |

## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-85998-2

Login Number: 85998

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: McCaskey, Jonathan

| Question  | Answer | Comment |
|---|--------|---------|
| The cooler's custody seal is intact.  | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.    | True   |         |
| Samples were received on ice.   | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).        | True   |         |
| Cooler Temperature is recorded.   | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen). | N/A    |         |
| WV: Container Temperature is recorded.  | N/A    |         |
| COC is present.   | True   |         |
| COC is filled out in ink and legible.   | True   |         |
| COC is filled out with all pertinent information.                                 | True   |         |
| There are no discrepancies between the containers received and the COC.           | True   |         |
| Sample containers have legible labels.  | True   |         |
| Containers are not broken or leaking.   | True   |         |
| Sample collection date/times are provided.  | True   |         |
| Appropriate sample containers are used.   | True   |         |
| Sample bottles are completely filled.   | True   |         |
| There is sufficient vol. for all requested analyses.                              | True   |         |
| Is the Field Sampler's name present on COC?                                       | True   |         |
| Sample custody seals are intact.  | N/A    |         |

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-88954-1

Client Project/Site: N. Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



Authorized for release by:  
7/14/2022 12:57:56 PM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer". The signature is written in a cursive, flowing style.

---

Kelly Bauer  
Project Manager  
7/14/2022 12:57:56 PM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 9  |
| QC Sample Results . . . . .        | 10 |
| QC Association Summary . . . . .   | 12 |
| Lab Chronicle . . . . .            | 13 |
| Certification Summary . . . . .    | 14 |
| Method Summary . . . . .           | 15 |
| Sample Summary . . . . .           | 16 |
| Chain of Custody . . . . .         | 17 |
| Receipt Checklists . . . . .       | 18 |

# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88954-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description                      |
|-----------|--|
| cn        | Refer to Case Narrative for further detail |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88954-1

---

## Job ID: 410-88954-1

---

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

### Narrative

---

**Job Narrative**  
**410-88954-1**

### Receipt

The samples were received on 6/24/2022 11:05 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.8°C

### PFAS

Method PFC\_IDA: The sample injection standard peak areas in the following samples: POD-2\_20220623 (410-88954-1) and POD-2\_20220623\_CF (410-88954-2) are outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.





# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88954-1

## Client Sample ID: POD-2\_20220623

Lab Sample ID: 410-88954-1

| Analyte                                   | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|---|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)           | 290    |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorononanoic acid (PFNA)             | 38     |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorodecanoic acid (PFDA)             | 9.1    |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA) - DL        | 1500   |           | 17  | 4.2  | ng/L | 10      |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) - DL | 1000   |           | 17  | 4.2  | ng/L | 10      |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS) - DL2 | 10000  |           | 170 | 42   | ng/L | 100     |   | 537 IDA | Total/NA  |

## Client Sample ID: POD-2\_20220623\_CF

Lab Sample ID: 410-88954-2

| Analyte                                   | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|---|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)           | 280    |           | 1.7 | 0.43 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorononanoic acid (PFNA)             | 39     |           | 1.7 | 0.43 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorodecanoic acid (PFDA)             | 8.2    |           | 1.7 | 0.43 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA) - DL        | 1600   |           | 17  | 4.3  | ng/L | 10      |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) - DL | 1000   |           | 17  | 4.3  | ng/L | 10      |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS) - DL2 | 12000  |           | 170 | 43   | ng/L | 100     |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88954-1

**Client Sample ID: POD-2\_20220623**

**Lab Sample ID: 410-88954-1**

Date Collected: 06/23/22 12:35

Matrix: Water

Date Received: 06/24/22 11:05

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                         | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA) | 290       |           | 1.7      | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 09:18 | 1       |
| Perfluorononanoic acid (PFNA)   | 38        |           | 1.7      | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 09:18 | 1       |
| Perfluorodecanoic acid (PFDA)   | 9.1       |           | 1.7      | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 09:18 | 1       |
| Isotope Dilution                | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                      | 78        |           | 31 - 182 |      |      |   | 07/06/22 11:41 | 07/12/22 09:18 | 1       |
| 13C8 PFOA                       | 83        |           | 48 - 162 |      |      |   | 07/06/22 11:41 | 07/12/22 09:18 | 1       |
| 13C9 PFNA                       | 84        |           | 51 - 167 |      |      |   | 07/06/22 11:41 | 07/12/22 09:18 | 1       |
| 13C3 PFHxS                      | 106       | cn        | 28 - 188 |      |      |   | 07/06/22 11:41 | 07/12/22 09:18 | 1       |
| 13C8 PFOS                       | 90        |           | 51 - 159 |      |      |   | 07/06/22 11:41 | 07/12/22 09:18 | 1       |
| 13C6 PFDA                       | 90        |           | 49 - 163 |      |      |   | 07/06/22 11:41 | 07/12/22 09:18 | 1       |

**Method: 537 IDA - EPA 537 Isotope Dilution - DL**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluorooctanoic acid (PFOA)        | 1500      |           | 17       | 4.2 | ng/L |   | 07/06/22 11:41 | 07/14/22 09:37 | 10      |
| Perfluorohexanesulfonic acid (PFHxS) | 1000      |           | 17       | 4.2 | ng/L |   | 07/06/22 11:41 | 07/14/22 09:37 | 10      |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C8 PFOA                            | 103       |           | 48 - 162 |     |      |   | 07/06/22 11:41 | 07/14/22 09:37 | 10      |
| 13C3 PFHxS                           | 116       | cn        | 28 - 188 |     |      |   | 07/06/22 11:41 | 07/14/22 09:37 | 10      |

**Method: 537 IDA - EPA 537 Isotope Dilution - DL2**

| Analyte                             | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluorooctanesulfonic acid (PFOS) | 10000     |           | 170      | 42  | ng/L |   | 07/06/22 11:41 | 07/14/22 09:59 | 100     |
| Isotope Dilution                    | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C8 PFOS                           | 116       |           | 51 - 159 |     |      |   | 07/06/22 11:41 | 07/14/22 09:59 | 100     |

**Client Sample ID: POD-2\_20220623\_CF**

**Lab Sample ID: 410-88954-2**

Date Collected: 06/23/22 12:25

Matrix: Water

Date Received: 06/24/22 11:05

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                         | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA) | 280       |           | 1.7      | 0.43 | ng/L |   | 07/06/22 11:41 | 07/12/22 09:29 | 1       |
| Perfluorononanoic acid (PFNA)   | 39        |           | 1.7      | 0.43 | ng/L |   | 07/06/22 11:41 | 07/12/22 09:29 | 1       |
| Perfluorodecanoic acid (PFDA)   | 8.2       |           | 1.7      | 0.43 | ng/L |   | 07/06/22 11:41 | 07/12/22 09:29 | 1       |
| Isotope Dilution                | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                      | 86        |           | 31 - 182 |      |      |   | 07/06/22 11:41 | 07/12/22 09:29 | 1       |
| 13C8 PFOA                       | 86        |           | 48 - 162 |      |      |   | 07/06/22 11:41 | 07/12/22 09:29 | 1       |
| 13C9 PFNA                       | 82        |           | 51 - 167 |      |      |   | 07/06/22 11:41 | 07/12/22 09:29 | 1       |
| 13C3 PFHxS                      | 122       | cn        | 28 - 188 |      |      |   | 07/06/22 11:41 | 07/12/22 09:29 | 1       |
| 13C8 PFOS                       | 95        |           | 51 - 159 |      |      |   | 07/06/22 11:41 | 07/12/22 09:29 | 1       |
| 13C6 PFDA                       | 89        |           | 49 - 163 |      |      |   | 07/06/22 11:41 | 07/12/22 09:29 | 1       |

**Method: 537 IDA - EPA 537 Isotope Dilution - DL**

| Analyte                              | Result | Qualifier | RL | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|----|-----|------|---|----------------|----------------|---------|
| Perfluorooctanoic acid (PFOA)        | 1600   |           | 17 | 4.3 | ng/L |   | 07/06/22 11:41 | 07/14/22 10:21 | 10      |
| Perfluorohexanesulfonic acid (PFHxS) | 1000   |           | 17 | 4.3 | ng/L |   | 07/06/22 11:41 | 07/14/22 10:21 | 10      |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88954-1

**Client Sample ID: POD-2\_20220623\_CF**

**Lab Sample ID: 410-88954-2**

Date Collected: 06/23/22 12:25

Matrix: Water

Date Received: 06/24/22 11:05

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C4 PFHpA              | 98               |                  | 31 - 182      | 07/06/22 11:41  | 07/14/22 10:21  | 10             |
| 13C8 PFOA               | 100              |                  | 48 - 162      | 07/06/22 11:41  | 07/14/22 10:21  | 10             |

**Method: 537 IDA - EPA 537 Isotope Dilution - DL2**

| Analyte                             | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Perfluorooctanesulfonic acid (PFOS) | 12000  |           | 170 | 43  | ng/L |   | 07/06/22 11:41 | 07/14/22 10:32 | 100     |

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C8 PFOS               | 95               |                  | 51 - 159      | 07/06/22 11:41  | 07/14/22 10:32  | 100            |



# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88954-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID       | Client Sample ID       | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|---------------------|------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                     |                        | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-88954-1         | POD-2_20220623         | 78  | 83                 | 84                 | 106 cn             | 90                 | 90                 |
| 410-88954-1 - DL    | POD-2_20220623         |   | 103                |                    | 116 cn             |                    |                    |
| 410-88954-1 - DL2   | POD-2_20220623         |   |                    |                    |                    | 116                |                    |
| 410-88954-2         | POD-2_20220623_CF      | 86  | 86                 | 82                 | 122 cn             | 95                 | 89                 |
| 410-88954-2 - DL    | POD-2_20220623_CF      | 98  | 100                |                    |                    |                    |                    |
| 410-88954-2 - DL2   | POD-2_20220623_CF      |   |                    |                    |                    | 95                 |                    |
| LCS 410-272712/2-A  | Lab Control Sample     | 92  | 90                 | 99                 | 85                 | 89                 | 90                 |
| LCSD 410-272712/3-A | Lab Control Sample Dup | 94  | 94                 | 91                 | 93                 | 91                 | 84                 |
| MB 410-272712/1-A   | Method Blank           | 91  | 85                 | 105                | 88                 | 91                 | 95                 |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88954-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-272712/1-A**  
**Matrix: Water**  
**Analysis Batch: 274018**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 272712**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 91        |           | 31 - 182 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C8 PFOA        | 85        |           | 48 - 162 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C9 PFNA        | 105       |           | 51 - 167 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C3 PFHxS       | 88        |           | 28 - 188 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C8 PFOS        | 91        |           | 51 - 159 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C6 PFDA        | 95        |           | 49 - 163 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |

**Lab Sample ID: LCS 410-272712/2-A**  
**Matrix: Water**  
**Analysis Batch: 274018**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 272712**

| Analyte                              | Spike Added | LCS    | LCS       | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|
|                                      |             | Result | Qualifier |      |   |      |             |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 24.9   |           | ng/L |   | 97   | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 28.4   |           | ng/L |   | 111  | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 26.6   |           | ng/L |   | 104  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 22.4   |           | ng/L |   | 96   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 24.7   |           | ng/L |   | 104  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 27.0   |           | ng/L |   | 105  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 92        |           | 31 - 182 |
| 13C8 PFOA        | 90        |           | 48 - 162 |
| 13C9 PFNA        | 99        |           | 51 - 167 |
| 13C3 PFHxS       | 85        |           | 28 - 188 |
| 13C8 PFOS        | 89        |           | 51 - 159 |
| 13C6 PFDA        | 90        |           | 49 - 163 |

**Lab Sample ID: LCSD 410-272712/3-A**  
**Matrix: Water**  
**Analysis Batch: 274018**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 272712**

| Analyte                              | Spike Added | LCSD   | LCSD      | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|-----|-----------|
|                                      |             | Result | Qualifier |      |   |      |             |     |           |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 25.9   |           | ng/L |   | 101  | 59 - 145    | 4   | 30        |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 27.1   |           | ng/L |   | 106  | 51 - 145    | 5   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 26.9   |           | ng/L |   | 105  | 61 - 139    | 1   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 23.3   |           | ng/L |   | 100  | 58 - 134    | 4   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 24.5   |           | ng/L |   | 103  | 45 - 150    | 1   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 28.1   |           | ng/L |   | 110  | 56 - 138    | 4   | 30        |

Eurofins Lancaster Laboratories Environment Testing, LLC

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88954-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 94               |                  | 31 - 182      |
| 13C8 PFOA               | 94               |                  | 48 - 162      |
| 13C9 PFNA               | 91               |                  | 51 - 167      |
| 13C3 PFHxS              | 93               |                  | 28 - 188      |
| 13C8 PFOS               | 91               |                  | 51 - 159      |
| 13C6 PFDA               | 84               |                  | 49 - 163      |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88954-1

## LCMS

### Prep Batch: 272712

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-88954-1         | POD-2_20220623         | Total/NA  | Water  | 537 IDA |            |
| 410-88954-1 - RA    | POD-2_20220623         | Total/NA  | Water  | 537 IDA |            |
| 410-88954-1 - DL    | POD-2_20220623         | Total/NA  | Water  | 537 IDA |            |
| 410-88954-1 - DL2   | POD-2_20220623         | Total/NA  | Water  | 537 IDA |            |
| 410-88954-2 - RA    | POD-2_20220623_CF      | Total/NA  | Water  | 537 IDA |            |
| 410-88954-2 - DL    | POD-2_20220623_CF      | Total/NA  | Water  | 537 IDA |            |
| 410-88954-2 - DL2   | POD-2_20220623_CF      | Total/NA  | Water  | 537 IDA |            |
| 410-88954-2         | POD-2_20220623_CF      | Total/NA  | Water  | 537 IDA |            |
| MB 410-272712/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-272712/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-272712/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 274018

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-88954-1         | POD-2_20220623         | Total/NA  | Water  | 537 IDA | 272712     |
| 410-88954-2         | POD-2_20220623_CF      | Total/NA  | Water  | 537 IDA | 272712     |
| MB 410-272712/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 272712     |
| LCS 410-272712/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 272712     |
| LCSD 410-272712/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 272712     |

### Analysis Batch: 275245

| Lab Sample ID     | Client Sample ID  | Prep Type | Matrix | Method  | Prep Batch |
|-------------------|-------------------|-----------|--------|---------|------------|
| 410-88954-1 - RA  | POD-2_20220623    | Total/NA  | Water  | 537 IDA | 272712     |
| 410-88954-1 - DL  | POD-2_20220623    | Total/NA  | Water  | 537 IDA | 272712     |
| 410-88954-1 - DL2 | POD-2_20220623    | Total/NA  | Water  | 537 IDA | 272712     |
| 410-88954-2 - RA  | POD-2_20220623_CF | Total/NA  | Water  | 537 IDA | 272712     |
| 410-88954-2 - DL  | POD-2_20220623_CF | Total/NA  | Water  | 537 IDA | 272712     |
| 410-88954-2 - DL2 | POD-2_20220623_CF | Total/NA  | Water  | 537 IDA | 272712     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88954-1

**Client Sample ID: POD-2\_20220623**

**Lab Sample ID: 410-88954-1**

**Date Collected: 06/23/22 12:35**

**Matrix: Water**

**Date Received: 06/24/22 11:05**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab  |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 272712       | 07/06/22 11:41       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 274018       | 07/12/22 09:18       | JVK6    | ELLE |
| Total/NA  | Prep       | 537 IDA      | RA  |                 | 272712       | 07/06/22 11:41       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      | RA  | 1               | 275245       | 07/14/22 09:26       | JVK6    | ELLE |
| Total/NA  | Prep       | 537 IDA      | DL  |                 | 272712       | 07/06/22 11:41       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      | DL  | 10              | 275245       | 07/14/22 09:37       | JVK6    | ELLE |
| Total/NA  | Prep       | 537 IDA      | DL2 |                 | 272712       | 07/06/22 11:41       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      | DL2 | 100             | 275245       | 07/14/22 09:59       | JVK6    | ELLE |

**Client Sample ID: POD-2\_20220623\_CF**

**Lab Sample ID: 410-88954-2**

**Date Collected: 06/23/22 12:25**

**Matrix: Water**

**Date Received: 06/24/22 11:05**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab  |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 272712       | 07/06/22 11:41       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 274018       | 07/12/22 09:29       | JVK6    | ELLE |
| Total/NA  | Prep       | 537 IDA      | RA  |                 | 272712       | 07/06/22 11:41       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      | RA  | 1               | 275245       | 07/14/22 10:10       | JVK6    | ELLE |
| Total/NA  | Prep       | 537 IDA      | DL  |                 | 272712       | 07/06/22 11:41       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      | DL  | 10              | 275245       | 07/14/22 10:21       | JVK6    | ELLE |
| Total/NA  | Prep       | 537 IDA      | DL2 |                 | 272712       | 07/06/22 11:41       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      | DL2 | 100             | 275245       | 07/14/22 10:32       | JVK6    | ELLE |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88954-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88954-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88954-1

---

| Lab Sample ID | Client Sample ID  | Matrix | Collected      | Received       |
|---------------|-------------------|--------|----------------|----------------|
| 410-88954-1   | POD-2_20220623    | Water  | 06/23/22 12:35 | 06/24/22 11:05 |
| 410-88954-2   | POD-2_20220623_CF | Water  | 06/23/22 12:25 | 06/24/22 11:05 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

**Eurofins Lancaster Laboratories Environme**

2425 New Holland Pike  
Lancaster, PA 17601  
Phone: 717-656-2300 Fax: 717-656-2681

**Chain of Cu**



410-88954 Chain of Custody

|                          |                                   |
|--------------------------|-----------------------------------|
| mer Tracking No(s)       | COC No<br>410-57598-16397.3       |
| ate of Origin: <b>ME</b> | Page<br>Page <b>6</b> of <b>1</b> |

|                                 |                                     |
|---------------------------------|-------------------------------------|
| <b>Client Information</b>       | Sampler<br><i>D. K. [Signature]</i> |
| Client Contact<br>Shana Whitney | Phone<br><i>603-229-1900</i>        |

|  |  |
|--|--|
| Company<br>Sanborn Head & Associates Inc | PWSID:   |
| Address<br>20 Foundry Street             | Due Date Requested:  |
| City<br>Concord                          | TAT Requested (days):  |
| State, Zip:<br>NH, 03301                 | Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Phone:<br><i>603.229-1900</i>            | PO #<br>Purchase Order Requested   |
| Email<br>SWhitney@sanbornhead.com        | WO #   |
| Project Name<br>PFAS in Groundwater      | Project #<br>41010916  |
| Site:                                    | SSOW#  |

| Analysis Requested  |                     |  |  |  |  |  |  |  |  |  |  | Job #:<br><i>5197.01</i> |                       |
|---------------------|---------------------|--|--|--|--|--|--|--|--|--|--|--------------------------|-----------------------|
| Preservation Codes: |                     |  |  |  |  |  |  |  |  |  |  |                          |                       |
| A - HCL             | M - Hexane          |  |  |  |  |  |  |  |  |  |  | B - NaOH                 | N - None              |
| C - Zn Acetate      | O - AsNaO2          |  |  |  |  |  |  |  |  |  |  | D - Nitric Acid          | P - Na2O4S            |
| E - NaHSO4          | Q - Na2SO3          |  |  |  |  |  |  |  |  |  |  | F - MeOH                 | R - Na2S2O3           |
| G - Amchlor         | S - H2SO4           |  |  |  |  |  |  |  |  |  |  | H - Ascorbic Acid        | T - TSP Dodecahydrate |
| I - Ice             | U - Acetone         |  |  |  |  |  |  |  |  |  |  | J - DI Water             | V - MCAA              |
| K - EDTA            | W - pH 4-5          |  |  |  |  |  |  |  |  |  |  | L - EDA                  | Y - Trizma            |
|                     | Z - other (specify) |  |  |  |  |  |  |  |  |  |  |                          |                       |

| Sample Identification    | Sample Date    | Sample Time  | Sample Type (C=Comp, G=grab) | Matrix (Water, Soil, Tissue, Air) | Id Filled Sample (Yes or No)        | PFC, IDA - UCMR3 & PFAS             | Number of Containers | Special Instructions/Note: |
|--------------------------|----------------|--------------|------------------------------|-----------------------------------|-------------------------------------|-------------------------------------|----------------------|----------------------------|
| <i>POD-2_20220623</i>    | <i>6/22/22</i> | <i>12:35</i> | <i>G</i>                     | <i>Water</i>                      | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                      |                            |
| <i>POD-2-20220623-CF</i> | <i>↓</i>       | <i>12:25</i> | <i>G</i>                     | <i>Water</i>                      | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                      |                            |
|                          |                |              |                              |                                   |                                     |                                     |                      |                            |
|                          |                |              |                              |                                   |                                     |                                     |                      |                            |
|                          |                |              |                              |                                   |                                     |                                     |                      |                            |
|                          |                |              |                              |                                   |                                     |                                     |                      |                            |
|                          |                |              |                              |                                   |                                     |                                     |                      |                            |
|                          |                |              |                              |                                   |                                     |                                     |                      |                            |
|                          |                |              |                              |                                   |                                     |                                     |                      |                            |
|                          |                |              |                              |                                   |                                     |                                     |                      |                            |

|   |   |
|---|---|
| <b>Possible Hazard Identification</b><br><input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological | <b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b><br><input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months |
| Deliverable Requested: I, II, III, IV, Other (specify)  | Special Instructions/QC Requirements:   |

|  |                                 |   |   |
|--|---------------------------------|---|---|
| Empty Kit Relinquished by:   | Date:                           | Time:   | Method of Shipment:   |
| Relinquished by: <i>[Signature]</i>  | Date/Time: <i>6/24/22 15:00</i> | Company: <i>SHA</i>   | Received by: _____ Date/Time: _____ Company: _____                                  |
| Relinquished by:   | Date/Time:                      | Company:  | Received by: _____ Date/Time: _____ Company: _____                                  |
| Relinquished by:   | Date/Time:                      | Company:  | Received by: <i>[Signature]</i> Date/Time: <i>6/24/22 11:05</i> Company: <i>EUE</i> |
| Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No | Custody Seal No.:               | Cooler Temperature(s) °C and Other Remarks:<br><i>4.80C</i> |   |

10/

10/1



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-88954-1

**Login Number: 88954**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: Renner, Melissa**

| Question   | Answer | Comment      |
|--|--------|--------------|
| The cooler's custody seal is intact.   | N/A    | Not present  |
| The cooler or samples do not appear to have been compromised or tampered with.             | True   |              |
| Samples were received on ice.  | True   |              |
| Cooler Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen).        | True   |              |
| Cooler Temperature is recorded.  | True   |              |
| WV: Container Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen). | N/A    |              |
| WV: Container Temperature is recorded.   | N/A    |              |
| COC is present.  | True   |              |
| COC is filled out in ink and legible.  | True   |              |
| COC is filled out with all pertinent information.  | True   |              |
| There are no discrepancies between the containers received and the COC.                    | True   |              |
| Sample containers have legible labels.   | True   |              |
| Containers are not broken or leaking.  | True   |              |
| Sample collection date/times are provided.   | True   |              |
| Appropriate sample containers are used.  | True   |              |
| Sample bottles are completely filled.  | True   |              |
| There is sufficient vol. for all requested analyses.                                       | True   |              |
| Is the Field Sampler's name present on COC?  | True   |              |
| Sample custody seals are intact.   | N/A    | Not present. |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?                | N/A    |              |

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-88956-1

Client Project/Site: N. Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



*Authorized for release by:*

7/21/2022 9:38:12 AM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer". The signature is written in a cursive, flowing style.

---

Kelly Bauer  
Project Manager  
7/21/2022 9:38:12 AM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 11 |
| QC Sample Results . . . . .        | 12 |
| QC Association Summary . . . . .   | 15 |
| Lab Chronicle . . . . .            | 16 |
| Certification Summary . . . . .    | 18 |
| Method Summary . . . . .           | 19 |
| Sample Summary . . . . .           | 20 |
| Chain of Custody . . . . .         | 21 |
| Receipt Checklists . . . . .       | 22 |



# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88956-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| B         | Compound was found in the blank and sample.  |
| cn        | Refer to Case Narrative for further detail   |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88956-1

---

## Job ID: 410-88956-1

---

### Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

#### Narrative

---

#### Job Narrative 410-88956-1

#### Receipt

The samples were received on 6/24/2022 11:05 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.8°C

#### Receipt Exceptions

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): POD-1\_20220623 (410-88956-4). The container labels list 10:20, while the COC lists 10:10. The client was contacted, and the lab was instructed to use the sample time listed on the container labels.

The containers for the following sample did not match the information listed on the Chain-of-Custody (COC): POD-1\_20220623 (410-88956-4). The number of received containers was 4, while the COC lists 2.

#### PFAS

Method PFC\_IDA: Target analyte: Perfluorooctanesulfonic acid (PFOS) was detected in the method blank associated with the following sample: FB-02\_20220623 (410-88956-8). Sufficient volume was not available to re-extract this sample. Target analyte: Perfluorooctanesulfonic acid (PFOS) was detected in field blank sample: FB-02\_20220623 (410-88956-8). Sufficient volume was not available to re-extract this sample.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88956-1

## Client Sample ID: Mill Pond\_20220623

## Lab Sample ID: 410-88956-1

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)     | 0.79   | J         | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)       | 1.5    | J         | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS) | 2.0    |           | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: Fore Bay\_20220623

## Lab Sample ID: 410-88956-2

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)     | 0.82   | J         | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)       | 2.1    |           | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS) | 1.4    | J         | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: SW-1\_20220623

## Lab Sample ID: 410-88956-3

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)     | 0.98   | J         | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)       | 1.9    |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS) | 1.3    | J         | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: POD-1\_20220623

## Lab Sample ID: 410-88956-4

| Analyte                                  | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|--|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)          | 63     |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)            | 190    |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorononanoic acid (PFNA)            | 25     |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS)     | 13     |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorodecanoic acid (PFDA)            | 66     |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS) - DL | 500    |           | 17  | 4.2  | ng/L | 10      |   | 537 IDA | Total/NA  |

## Client Sample ID: SW-2\_20220623

## Lab Sample ID: 410-88956-5

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)     | 0.95   | J         | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)       | 2.2    |           | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS) | 6.2    |           | 1.6 | 0.40 | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: SW-3\_20220623

## Lab Sample ID: 410-88956-6

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)     | 0.94   | J         | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)       | 2.2    |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS) | 2.4    |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: POD-3\_20220623

## Lab Sample ID: 410-88956-7

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)     | 1.4    | J         | 1.7 | 0.43 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)       | 3.4    |           | 1.7 | 0.43 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorononanoic acid (PFNA)       | 0.75   | J         | 1.7 | 0.43 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS) | 8.0    |           | 1.7 | 0.43 | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: FB-02\_20220623

## Lab Sample ID: 410-88956-8

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 0.53   | J B cn    | 1.6 | 0.41 | ng/L | 1       |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88956-1

**Client Sample ID: Mill Pond\_20220623**

**Lab Sample ID: 410-88956-1**

**Date Collected: 06/23/22 13:30**

**Matrix: Water**

**Date Received: 06/24/22 11:05**

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 0.79      | J         | 1.6      | 0.40 | ng/L |   | 07/06/22 11:41 | 07/12/22 09:40 | 1       |
| Perfluorooctanoic acid (PFOA)        | 1.5       | J         | 1.6      | 0.40 | ng/L |   | 07/06/22 11:41 | 07/12/22 09:40 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.6      | 0.40 | ng/L |   | 07/06/22 11:41 | 07/12/22 09:40 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |           | 1.6      | 0.40 | ng/L |   | 07/06/22 11:41 | 07/12/22 09:40 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 2.0       |           | 1.6      | 0.40 | ng/L |   | 07/06/22 11:41 | 07/12/22 09:40 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.6      | 0.40 | ng/L |   | 07/06/22 11:41 | 07/12/22 09:40 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 93        |           | 31 - 182 |      |      |   | 07/06/22 11:41 | 07/12/22 09:40 | 1       |
| 13C8 PFOA                            | 97        |           | 48 - 162 |      |      |   | 07/06/22 11:41 | 07/12/22 09:40 | 1       |
| 13C9 PFNA                            | 100       |           | 51 - 167 |      |      |   | 07/06/22 11:41 | 07/12/22 09:40 | 1       |
| 13C3 PFHxS                           | 93        |           | 28 - 188 |      |      |   | 07/06/22 11:41 | 07/12/22 09:40 | 1       |
| 13C8 PFOS                            | 99        |           | 51 - 159 |      |      |   | 07/06/22 11:41 | 07/12/22 09:40 | 1       |
| 13C6 PFDA                            | 93        |           | 49 - 163 |      |      |   | 07/06/22 11:41 | 07/12/22 09:40 | 1       |

**Client Sample ID: Fore Bay\_20220623**

**Lab Sample ID: 410-88956-2**

**Date Collected: 06/23/22 13:40**

**Matrix: Water**

**Date Received: 06/24/22 11:05**

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 0.82      | J         | 1.6      | 0.40 | ng/L |   | 07/06/22 11:41 | 07/12/22 09:51 | 1       |
| Perfluorooctanoic acid (PFOA)        | 2.1       |           | 1.6      | 0.40 | ng/L |   | 07/06/22 11:41 | 07/12/22 09:51 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.6      | 0.40 | ng/L |   | 07/06/22 11:41 | 07/12/22 09:51 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |           | 1.6      | 0.40 | ng/L |   | 07/06/22 11:41 | 07/12/22 09:51 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 1.4       | J         | 1.6      | 0.40 | ng/L |   | 07/06/22 11:41 | 07/12/22 09:51 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.6      | 0.40 | ng/L |   | 07/06/22 11:41 | 07/12/22 09:51 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 88        |           | 31 - 182 |      |      |   | 07/06/22 11:41 | 07/12/22 09:51 | 1       |
| 13C8 PFOA                            | 80        |           | 48 - 162 |      |      |   | 07/06/22 11:41 | 07/12/22 09:51 | 1       |
| 13C9 PFNA                            | 86        |           | 51 - 167 |      |      |   | 07/06/22 11:41 | 07/12/22 09:51 | 1       |
| 13C3 PFHxS                           | 87        |           | 28 - 188 |      |      |   | 07/06/22 11:41 | 07/12/22 09:51 | 1       |
| 13C8 PFOS                            | 80        |           | 51 - 159 |      |      |   | 07/06/22 11:41 | 07/12/22 09:51 | 1       |
| 13C6 PFDA                            | 82        |           | 49 - 163 |      |      |   | 07/06/22 11:41 | 07/12/22 09:51 | 1       |

**Client Sample ID: SW-1\_20220623**

**Lab Sample ID: 410-88956-3**

**Date Collected: 06/23/22 08:50**

**Matrix: Water**

**Date Received: 06/24/22 11:05**

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 0.98   | J         | 1.7 | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:02 | 1       |
| Perfluorooctanoic acid (PFOA)        | 1.9    |           | 1.7 | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:02 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 1.7 | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:02 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 1.7 | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:02 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 1.3    | J         | 1.7 | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:02 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.7 | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:02 | 1       |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88956-1

**Client Sample ID: SW-1\_20220623**

**Lab Sample ID: 410-88956-3**

Date Collected: 06/23/22 08:50

Matrix: Water

Date Received: 06/24/22 11:05

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 85        |           | 31 - 182 | 07/06/22 11:41 | 07/12/22 10:02 | 1       |
| 13C8 PFOA        | 86        |           | 48 - 162 | 07/06/22 11:41 | 07/12/22 10:02 | 1       |
| 13C9 PFNA        | 93        |           | 51 - 167 | 07/06/22 11:41 | 07/12/22 10:02 | 1       |
| 13C3 PFHxS       | 91        |           | 28 - 188 | 07/06/22 11:41 | 07/12/22 10:02 | 1       |
| 13C8 PFOS        | 95        |           | 51 - 159 | 07/06/22 11:41 | 07/12/22 10:02 | 1       |
| 13C6 PFDA        | 86        |           | 49 - 163 | 07/06/22 11:41 | 07/12/22 10:02 | 1       |

**Client Sample ID: POD-1\_20220623**

**Lab Sample ID: 410-88956-4**

Date Collected: 06/23/22 10:20

Matrix: Water

Date Received: 06/24/22 11:05

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 63     |           | 1.7 | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:13 | 1       |
| Perfluorooctanoic acid (PFOA)        | 190    |           | 1.7 | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:13 | 1       |
| Perfluorononanoic acid (PFNA)        | 25     |           | 1.7 | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:13 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 13     |           | 1.7 | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:13 | 1       |
| Perfluorodecanoic acid (PFDA)        | 66     |           | 1.7 | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:13 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 97        |           | 31 - 182 | 07/06/22 11:41 | 07/12/22 10:13 | 1       |
| 13C8 PFOA        | 97        |           | 48 - 162 | 07/06/22 11:41 | 07/12/22 10:13 | 1       |
| 13C9 PFNA        | 79        |           | 51 - 167 | 07/06/22 11:41 | 07/12/22 10:13 | 1       |
| 13C3 PFHxS       | 101       |           | 28 - 188 | 07/06/22 11:41 | 07/12/22 10:13 | 1       |
| 13C8 PFOS        | 90        |           | 51 - 159 | 07/06/22 11:41 | 07/12/22 10:13 | 1       |
| 13C6 PFDA        | 95        |           | 49 - 163 | 07/06/22 11:41 | 07/12/22 10:13 | 1       |

**Method: 537 IDA - EPA 537 Isotope Dilution - DL**

| Analyte                             | Result | Qualifier | RL | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-------------------------------------|--------|-----------|----|-----|------|---|----------------|----------------|---------|
| Perfluorooctanesulfonic acid (PFOS) | 500    |           | 17 | 4.2 | ng/L |   | 07/06/22 11:41 | 07/14/22 10:43 | 10      |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C8 PFOS        | 101       |           | 51 - 159 | 07/06/22 11:41 | 07/14/22 10:43 | 10      |

**Client Sample ID: SW-2\_20220623**

**Lab Sample ID: 410-88956-5**

Date Collected: 06/23/22 12:30

Matrix: Water

Date Received: 06/24/22 11:05

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 0.95   | J         | 1.6 | 0.40 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:24 | 1       |
| Perfluorooctanoic acid (PFOA)        | 2.2    |           | 1.6 | 0.40 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:24 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 1.6 | 0.40 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:24 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 1.6 | 0.40 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:24 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 6.2    |           | 1.6 | 0.40 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:24 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.6 | 0.40 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:24 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 95        |           | 31 - 182 | 07/06/22 11:41 | 07/12/22 10:24 | 1       |
| 13C8 PFOA        | 93        |           | 48 - 162 | 07/06/22 11:41 | 07/12/22 10:24 | 1       |
| 13C9 PFNA        | 99        |           | 51 - 167 | 07/06/22 11:41 | 07/12/22 10:24 | 1       |
| 13C3 PFHxS       | 97        |           | 28 - 188 | 07/06/22 11:41 | 07/12/22 10:24 | 1       |

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88956-1

## Client Sample ID: SW-2\_20220623

## Lab Sample ID: 410-88956-5

Date Collected: 06/23/22 12:30

Matrix: Water

Date Received: 06/24/22 11:05

### Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C8 PFOS        | 91        |           | 51 - 159 | 07/06/22 11:41 | 07/12/22 10:24 | 1       |
| 13C6 PFDA        | 101       |           | 49 - 163 | 07/06/22 11:41 | 07/12/22 10:24 | 1       |

## Client Sample ID: SW-3\_20220623

## Lab Sample ID: 410-88956-6

Date Collected: 06/23/22 13:00

Matrix: Water

Date Received: 06/24/22 11:05

### Method: 537 IDA - EPA 537 Isotope Dilution

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 0.94   | J         | 1.7 | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:35 | 1       |
| Perfluorooctanoic acid (PFOA)        | 2.2    |           | 1.7 | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:35 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 1.7 | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:35 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 1.7 | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:35 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 2.4    |           | 1.7 | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:35 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.7 | 0.42 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:35 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 88        |           | 31 - 182 | 07/06/22 11:41 | 07/12/22 10:35 | 1       |
| 13C8 PFOA        | 87        |           | 48 - 162 | 07/06/22 11:41 | 07/12/22 10:35 | 1       |
| 13C9 PFNA        | 88        |           | 51 - 167 | 07/06/22 11:41 | 07/12/22 10:35 | 1       |
| 13C3 PFHxS       | 91        |           | 28 - 188 | 07/06/22 11:41 | 07/12/22 10:35 | 1       |
| 13C8 PFOS        | 84        |           | 51 - 159 | 07/06/22 11:41 | 07/12/22 10:35 | 1       |
| 13C6 PFDA        | 88        |           | 49 - 163 | 07/06/22 11:41 | 07/12/22 10:35 | 1       |

## Client Sample ID: POD-3\_20220623

## Lab Sample ID: 410-88956-7

Date Collected: 06/23/22 13:15

Matrix: Water

Date Received: 06/24/22 11:05

### Method: 537 IDA - EPA 537 Isotope Dilution

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 1.4    | J         | 1.7 | 0.43 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:46 | 1       |
| Perfluorooctanoic acid (PFOA)        | 3.4    |           | 1.7 | 0.43 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:46 | 1       |
| Perfluorononanoic acid (PFNA)        | 0.75   | J         | 1.7 | 0.43 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:46 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 1.7 | 0.43 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:46 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 8.0    |           | 1.7 | 0.43 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:46 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.7 | 0.43 | ng/L |   | 07/06/22 11:41 | 07/12/22 10:46 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 93        |           | 31 - 182 | 07/06/22 11:41 | 07/12/22 10:46 | 1       |
| 13C8 PFOA        | 88        |           | 48 - 162 | 07/06/22 11:41 | 07/12/22 10:46 | 1       |
| 13C9 PFNA        | 88        |           | 51 - 167 | 07/06/22 11:41 | 07/12/22 10:46 | 1       |
| 13C3 PFHxS       | 93        |           | 28 - 188 | 07/06/22 11:41 | 07/12/22 10:46 | 1       |
| 13C8 PFOS        | 85        |           | 51 - 159 | 07/06/22 11:41 | 07/12/22 10:46 | 1       |
| 13C6 PFDA        | 83        |           | 49 - 163 | 07/06/22 11:41 | 07/12/22 10:46 | 1       |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88956-1

**Client Sample ID: FB-02\_20220623**

**Lab Sample ID: 410-88956-8**

**Date Collected: 06/23/22 12:45**

**Matrix: Water**

**Date Received: 06/24/22 11:05**

**Method: 537 IDA - EPA 537 Isotope Dilution**

| Analyte                                    | Result      | Qualifier     | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--|-------------|---------------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)            | ND          |               | 1.6 | 0.41 | ng/L |   | 06/29/22 10:16 | 06/30/22 14:18 | 1       |
| Perfluorooctanoic acid (PFOA)              | ND          |               | 1.6 | 0.41 | ng/L |   | 06/29/22 10:16 | 06/30/22 14:18 | 1       |
| Perfluorononanoic acid (PFNA)              | ND          |               | 1.6 | 0.41 | ng/L |   | 06/29/22 10:16 | 06/30/22 14:18 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)       | ND          |               | 1.6 | 0.41 | ng/L |   | 06/29/22 10:16 | 06/30/22 14:18 | 1       |
| <b>Perfluorooctanesulfonic acid (PFOS)</b> | <b>0.53</b> | <b>J B cn</b> | 1.6 | 0.41 | ng/L |   | 06/29/22 10:16 | 06/30/22 14:18 | 1       |
| Perfluorodecanoic acid (PFDA)              | ND          |               | 1.6 | 0.41 | ng/L |   | 06/29/22 10:16 | 06/30/22 14:18 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 127       |           | 31 - 182 | 06/29/22 10:16 | 06/30/22 14:18 | 1       |
| 13C8 PFOA        | 118       |           | 48 - 162 | 06/29/22 10:16 | 06/30/22 14:18 | 1       |
| 13C9 PFNA        | 133       |           | 51 - 167 | 06/29/22 10:16 | 06/30/22 14:18 | 1       |
| 13C3 PFHxS       | 117       |           | 28 - 188 | 06/29/22 10:16 | 06/30/22 14:18 | 1       |
| 13C8 PFOS        | 120       |           | 51 - 159 | 06/29/22 10:16 | 06/30/22 14:18 | 1       |
| 13C6 PFDA        | 127       |           | 49 - 163 | 06/29/22 10:16 | 06/30/22 14:18 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88956-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID       | Client Sample ID       | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|---------------------|------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                     |                        | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-88956-1         | Mill Pond_20220623     | 93  | 97                 | 100                | 93                 | 99                 | 93                 |
| 410-88956-2         | Fore Bay_20220623      | 88  | 80                 | 86                 | 87                 | 80                 | 82                 |
| 410-88956-3         | SW-1_20220623          | 85  | 86                 | 93                 | 91                 | 95                 | 86                 |
| 410-88956-4         | POD-1_20220623         | 97  | 97                 | 79                 | 101                | 90                 | 95                 |
| 410-88956-4 - DL    | POD-1_20220623         |   |                    |                    |                    | 101                |                    |
| 410-88956-5         | SW-2_20220623          | 95  | 93                 | 99                 | 97                 | 91                 | 101                |
| 410-88956-6         | SW-3_20220623          | 88  | 87                 | 88                 | 91                 | 84                 | 88                 |
| 410-88956-7         | POD-3_20220623         | 93  | 88                 | 88                 | 93                 | 85                 | 83                 |
| 410-88956-8         | FB-02_20220623         | 127   | 118                | 133                | 117                | 120                | 127                |
| LCS 410-270658/2-A  | Lab Control Sample     | 114   | 120                | 120                | 111                | 118                | 116                |
| LCS 410-272712/2-A  | Lab Control Sample     | 92  | 90                 | 99                 | 85                 | 89                 | 90                 |
| LCSD 410-270658/3-A | Lab Control Sample Dup | 127   | 110                | 127                | 129                | 126                | 127                |
| LCSD 410-272712/3-A | Lab Control Sample Dup | 94  | 94                 | 91                 | 93                 | 91                 | 84                 |
| MB 410-270658/1-A   | Method Blank           | 113   | 110                | 127                | 107                | 104                | 105                |
| MB 410-272712/1-A   | Method Blank           | 91  | 85                 | 105                | 88                 | 91                 | 95                 |

### Surrogate Legend

C4PFHA = 13C4 PFHpA  
 C8PFOA = 13C8 PFOA  
 C9PFNA = 13C9 PFNA  
 C3PFHS = 13C3 PFHxS  
 C8PFOS = 13C8 PFOS  
 C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88956-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-270658/1-A**  
**Matrix: Water**  
**Analysis Batch: 270936**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 270658**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 0.607  | J         | 2.0 | 0.50 | ng/L |   | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 06/29/22 10:16 | 06/30/22 09:39 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 113       |           | 31 - 182 | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| 13C8 PFOA        | 110       |           | 48 - 162 | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| 13C9 PFNA        | 127       |           | 51 - 167 | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| 13C3 PFHxS       | 107       |           | 28 - 188 | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| 13C8 PFOS        | 104       |           | 51 - 159 | 06/29/22 10:16 | 06/30/22 09:39 | 1       |
| 13C6 PFDA        | 105       |           | 49 - 163 | 06/29/22 10:16 | 06/30/22 09:39 | 1       |

**Lab Sample ID: LCS 410-270658/2-A**  
**Matrix: Water**  
**Analysis Batch: 270936**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 270658**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec        | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|-------------|-------------|
|                                      |             |            |               |      |   |             |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 20.8       |               | ng/L |   | 81 51 - 145 |             |
| Perfluorononanoic acid (PFNA)        | 25.6        | 22.2       |               | ng/L |   | 87 61 - 139 |             |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 18.8       |               | ng/L |   | 81 58 - 134 |             |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 20.1       |               | ng/L |   | 85 45 - 150 |             |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 22.6       |               | ng/L |   | 88 56 - 138 |             |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 114       |           | 31 - 182 |
| 13C8 PFOA        | 120       |           | 48 - 162 |
| 13C9 PFNA        | 120       |           | 51 - 167 |
| 13C3 PFHxS       | 111       |           | 28 - 188 |
| 13C8 PFOS        | 118       |           | 51 - 159 |
| 13C6 PFDA        | 116       |           | 49 - 163 |

**Lab Sample ID: LCSD 410-270658/3-A**  
**Matrix: Water**  
**Analysis Batch: 270936**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 270658**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD |       |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-------|
|                                      |             |             |                |      |   |      |             | RPD | Limit |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 20.5        |                | ng/L |   | 80   | 59 - 145    | 3   | 30    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 25.2        |                | ng/L |   | 98   | 51 - 145    | 19  | 30    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 22.2        |                | ng/L |   | 87   | 61 - 139    | 0   | 30    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 18.7        |                | ng/L |   | 80   | 58 - 134    | 0   | 30    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 20.4        |                | ng/L |   | 86   | 45 - 150    | 1   | 30    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 23.2        |                | ng/L |   | 90   | 56 - 138    | 2   | 30    |

Eurofins Lancaster Laboratories Environment Testing, LLC

# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88956-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| Isotope Dilution | LCSD      |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 127       |           | 31 - 182 |
| 13C8 PFOA        | 110       |           | 48 - 162 |
| 13C9 PFNA        | 127       |           | 51 - 167 |
| 13C3 PFHxS       | 129       |           | 28 - 188 |
| 13C8 PFOS        | 126       |           | 51 - 159 |
| 13C6 PFDA        | 127       |           | 49 - 163 |

**Lab Sample ID: MB 410-272712/1-A**  
**Matrix: Water**  
**Analysis Batch: 274018**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 272712**

| Analyte                              | MB MB  |           | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 07/06/22 11:41 | 07/12/22 06:41 | 1       |

| Isotope Dilution | MB MB     |           | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 91        |           | 31 - 182 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C8 PFOA        | 85        |           | 48 - 162 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C9 PFNA        | 105       |           | 51 - 167 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C3 PFHxS       | 88        |           | 28 - 188 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C8 PFOS        | 91        |           | 51 - 159 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |
| 13C6 PFDA        | 95        |           | 49 - 163 | 07/06/22 11:41 | 07/12/22 06:41 | 1       |

**Lab Sample ID: LCS 410-272712/2-A**  
**Matrix: Water**  
**Analysis Batch: 274018**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 272712**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 28.4       |               | ng/L |   | 111  | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 26.6       |               | ng/L |   | 104  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 22.4       |               | ng/L |   | 96   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 24.7       |               | ng/L |   | 104  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 27.0       |               | ng/L |   | 105  | 56 - 138    |

| Isotope Dilution | LCS LCS   |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 92        |           | 31 - 182 |
| 13C8 PFOA        | 90        |           | 48 - 162 |
| 13C9 PFNA        | 99        |           | 51 - 167 |
| 13C3 PFHxS       | 85        |           | 28 - 188 |
| 13C8 PFOS        | 89        |           | 51 - 159 |
| 13C6 PFDA        | 90        |           | 49 - 163 |

# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88956-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

**Lab Sample ID: LCSD 410-272712/3-A**  
**Matrix: Water**  
**Analysis Batch: 274018**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 272712**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec     |     | RPD | Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|----------|-----|-----|-------|
|                                      |             |             |                |      |   |      | Limits   | RPD |     |       |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 25.9        |                | ng/L |   | 101  | 59 - 145 | 4   | 30  |       |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 27.1        |                | ng/L |   | 106  | 51 - 145 | 5   | 30  |       |
| Perfluorononanoic acid (PFNA)        | 25.6        | 26.9        |                | ng/L |   | 105  | 61 - 139 | 1   | 30  |       |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 23.3        |                | ng/L |   | 100  | 58 - 134 | 4   | 30  |       |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 24.5        |                | ng/L |   | 103  | 45 - 150 | 1   | 30  |       |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 28.1        |                | ng/L |   | 110  | 56 - 138 | 4   | 30  |       |

| Isotope Dilution | LCSD      |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 94        |           | 31 - 182 |
| 13C8 PFOA        | 94        |           | 48 - 162 |
| 13C9 PFNA        | 91        |           | 51 - 167 |
| 13C3 PFHxS       | 93        |           | 28 - 188 |
| 13C8 PFOS        | 91        |           | 51 - 159 |
| 13C6 PFDA        | 84        |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88956-1

## LCMS

### Prep Batch: 270658

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-88956-8         | FB-02_20220623         | Total/NA  | Water  | 537 IDA |            |
| MB 410-270658/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-270658/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-270658/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 270936

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-88956-8         | FB-02_20220623         | Total/NA  | Water  | 537 IDA | 270658     |
| MB 410-270658/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 270658     |
| LCS 410-270658/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 270658     |
| LCSD 410-270658/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 270658     |

### Prep Batch: 272712

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-88956-1         | Mill Pond_20220623     | Total/NA  | Water  | 537 IDA |            |
| 410-88956-2         | Fore Bay_20220623      | Total/NA  | Water  | 537 IDA |            |
| 410-88956-3         | SW-1_20220623          | Total/NA  | Water  | 537 IDA |            |
| 410-88956-4 - DL    | POD-1_20220623         | Total/NA  | Water  | 537 IDA |            |
| 410-88956-4         | POD-1_20220623         | Total/NA  | Water  | 537 IDA |            |
| 410-88956-5         | SW-2_20220623          | Total/NA  | Water  | 537 IDA |            |
| 410-88956-6         | SW-3_20220623          | Total/NA  | Water  | 537 IDA |            |
| 410-88956-7         | POD-3_20220623         | Total/NA  | Water  | 537 IDA |            |
| MB 410-272712/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-272712/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-272712/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 274018

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-88956-1         | Mill Pond_20220623     | Total/NA  | Water  | 537 IDA | 272712     |
| 410-88956-2         | Fore Bay_20220623      | Total/NA  | Water  | 537 IDA | 272712     |
| 410-88956-3         | SW-1_20220623          | Total/NA  | Water  | 537 IDA | 272712     |
| 410-88956-4         | POD-1_20220623         | Total/NA  | Water  | 537 IDA | 272712     |
| 410-88956-5         | SW-2_20220623          | Total/NA  | Water  | 537 IDA | 272712     |
| 410-88956-6         | SW-3_20220623          | Total/NA  | Water  | 537 IDA | 272712     |
| 410-88956-7         | POD-3_20220623         | Total/NA  | Water  | 537 IDA | 272712     |
| MB 410-272712/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 272712     |
| LCS 410-272712/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 272712     |
| LCSD 410-272712/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 272712     |

### Analysis Batch: 275245

| Lab Sample ID    | Client Sample ID | Prep Type | Matrix | Method  | Prep Batch |
|------------------|------------------|-----------|--------|---------|------------|
| 410-88956-4 - DL | POD-1_20220623   | Total/NA  | Water  | 537 IDA | 272712     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88956-1

## Client Sample ID: Mill Pond\_20220623

Lab Sample ID: 410-88956-1

Date Collected: 06/23/22 13:30

Matrix: Water

Date Received: 06/24/22 11:05

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab  |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 272712       | 07/06/22 11:41       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 274018       | 07/12/22 09:40       | JVK6    | ELLE |

## Client Sample ID: Fore Bay\_20220623

Lab Sample ID: 410-88956-2

Date Collected: 06/23/22 13:40

Matrix: Water

Date Received: 06/24/22 11:05

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab  |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 272712       | 07/06/22 11:41       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 274018       | 07/12/22 09:51       | JVK6    | ELLE |

## Client Sample ID: SW-1\_20220623

Lab Sample ID: 410-88956-3

Date Collected: 06/23/22 08:50

Matrix: Water

Date Received: 06/24/22 11:05

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab  |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 272712       | 07/06/22 11:41       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 274018       | 07/12/22 10:02       | JVK6    | ELLE |

## Client Sample ID: POD-1\_20220623

Lab Sample ID: 410-88956-4

Date Collected: 06/23/22 10:20

Matrix: Water

Date Received: 06/24/22 11:05

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab  |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 272712       | 07/06/22 11:41       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 274018       | 07/12/22 10:13       | JVK6    | ELLE |
| Total/NA  | Prep       | 537 IDA      | DL  |                 | 272712       | 07/06/22 11:41       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      | DL  | 10              | 275245       | 07/14/22 10:43       | JVK6    | ELLE |

## Client Sample ID: SW-2\_20220623

Lab Sample ID: 410-88956-5

Date Collected: 06/23/22 12:30

Matrix: Water

Date Received: 06/24/22 11:05

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab  |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 272712       | 07/06/22 11:41       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 274018       | 07/12/22 10:24       | JVK6    | ELLE |

## Client Sample ID: SW-3\_20220623

Lab Sample ID: 410-88956-6

Date Collected: 06/23/22 13:00

Matrix: Water

Date Received: 06/24/22 11:05

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab  |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 272712       | 07/06/22 11:41       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 274018       | 07/12/22 10:35       | JVK6    | ELLE |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88956-1

**Client Sample ID: POD-3\_20220623**

**Lab Sample ID: 410-88956-7**

**Date Collected: 06/23/22 13:15**

**Matrix: Water**

**Date Received: 06/24/22 11:05**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab  |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 272712       | 07/06/22 11:41       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 274018       | 07/12/22 10:46       | JVK6    | ELLE |

**Client Sample ID: FB-02\_20220623**

**Lab Sample ID: 410-88956-8**

**Date Collected: 06/23/22 12:45**

**Matrix: Water**

**Date Received: 06/24/22 11:05**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab  |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 270658       | 06/29/22 10:16       | D5VP    | ELLE |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 270936       | 06/30/22 14:18       | JVK6    | ELLE |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88956-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |



# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88956-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300





# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N. Monmouth PFAS 5197.01

Job ID: 410-88956-1

| Lab Sample ID | Client Sample ID   | Matrix | Collected      | Received       |
|---------------|--------------------|--------|----------------|----------------|
| 410-88956-1   | Mill Pond_20220623 | Water  | 06/23/22 13:30 | 06/24/22 11:05 |
| 410-88956-2   | Fore Bay_20220623  | Water  | 06/23/22 13:40 | 06/24/22 11:05 |
| 410-88956-3   | SW-1_20220623      | Water  | 06/23/22 08:50 | 06/24/22 11:05 |
| 410-88956-4   | POD-1_20220623     | Water  | 06/23/22 10:20 | 06/24/22 11:05 |
| 410-88956-5   | SW-2_20220623      | Water  | 06/23/22 12:30 | 06/24/22 11:05 |
| 410-88956-6   | SW-3_20220623      | Water  | 06/23/22 13:00 | 06/24/22 11:05 |
| 410-88956-7   | POD-3_20220623     | Water  | 06/23/22 13:15 | 06/24/22 11:05 |
| 410-88956-8   | FB-02_20220623     | Water  | 06/23/22 12:45 | 06/24/22 11:05 |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



410-88956 Chain of Custody

|   |  |  |  |                            |  |  |  |                                    |  |                |  |                            |  |
|---|--|--|--|----------------------------|--|--|--|------------------------------------|--|----------------|--|----------------------------|--|
| <b>Client Information</b>                                     |  | Sampler: <b>D. Kelsey</b>  |  | Lab Tracking No(s)         |  | COC No:  |  |                                    |  |                |  |                            |  |
| Client Contact:<br>Shana Whitney                              |  | Phone: <b>603-229-1900</b>   |  | 410-88956 Chain of Custody |  | 410-57598-16397.2  |  |                                    |  |                |  |                            |  |
| Company:<br>Sanborn Head & Associates Inc                     |  | PWSID:   |  | State of Origin: <b>MZ</b> |  | Page: <b>1</b> of <b>1</b>   |  |                                    |  |                |  |                            |  |
| Address:<br>20 Foundry Street                                 |  | Due Date Requested:  |  | <b>Analysis Requested</b>  |  | Job #: <b>5197.01</b>  |  |                                    |  |                |  |                            |  |
| City:<br>Concord  |  | TAT Requested (days):  |  |                            |  | Total Number of Containers<br><b>PFAS 537</b><br><b>MDD w/ 150ppm Pinpoint</b> |  | Preservation Codes:                |  |                |  |                            |  |
| State, Zip:<br>NH, 03301                                      |  | Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No |  |                            |  |  |  | A - HCL                            |  | M - Hexane     |  |                            |  |
| Phone:<br><b>603.229.1900</b>                                 |  | PO #   |  |                            |  |  |  | B - NaOH                           |  | N - None       |  |                            |  |
| Email:<br>SWhitney@sanbornhead.com <b>ABU4740 SANBORNHEAD</b> |  | Purchase Order Requested   |  |                            |  |  |  | C - Zn Acetate                     |  | O - AsNaO2     |  |                            |  |
| Project Name:<br>PFAS in Groundwater                          |  | Project #:<br>41010916   |  |                            |  |  |  | D - Nitric Acid                    |  | P - Na2O4S     |  |                            |  |
| Site:<br><b>N. Monmouth PFAS 5197.01</b>                      |  | SSOW#:   |  | E - NaHSO4                 |  |  |  | Q - Na2SO3                         |  |                |  |                            |  |
| <b>Sample Identification</b>                                  |  | Sample Date  |  | Sample Time                |  | Sample Type (C=comp, G=grab)   |  | Matrix (Water, Solid, Tissue, Air) |  | Retention Code |  | Special Instructions/Note: |  |
|   |  |  |  |                            |  |  |  |                                    |  |                |  |                            |  |
| Mill Pond - 20220623  |  | 6/23/2022  |  | 13:30                      |  | G  |  | Water                              |  | X              |  | 2                          |  |
| Fore Bay - 20220623   |  | 6/23/2022  |  | 13:40                      |  | G  |  | Water                              |  | X              |  | 2                          |  |
| SW-1 - 20220623   |  | 6/23/2022  |  | 8:50                       |  | G  |  | Water                              |  | x              |  | 2                          |  |
| POD-1 - 20220623  |  | 6/23/2022  |  | 10:10                      |  | G  |  | Water                              |  | x              |  | 2                          |  |
| SW-2 - 20220623   |  | 6/23/2022  |  | 12:30                      |  | G  |  | Water                              |  | x              |  | 2                          |  |
| SW-3 - 20220623   |  | 6/23/2022  |  | 13:00                      |  | G  |  | Water                              |  | x              |  | 2                          |  |
| POD-3 - 20220623  |  | 6/23/2022  |  | 13:15                      |  | G  |  | Water                              |  | x              |  | 2                          |  |
| FB-02 - 20220623  |  | 6/23/2022  |  | 12:45                      |  | G  |  | Water                              |  | x              |  | 1                          |  |
|   |  |  |  |                            |  |  |  | Water                              |  |                |  |                            |  |
|   |  |  |  |                            |  |  |  | Water                              |  |                |  |                            |  |
|   |  |  |  |                            |  |  |  | Water                              |  |                |  |                            |  |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

*JH*

*el*

**4.8°C**

**6/24/22 11:05**

**5/19**

# Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-88956-1

**Login Number: 88956**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: Renner, Melissa**

| <b>Question</b>  | <b>Answer</b> | <b>Comment</b>                      |
|--|---------------|-------------------------------------|
| The cooler's custody seal is intact.   | N/A           | Not present                         |
| The cooler or samples do not appear to have been compromised or tampered with. | True          |                                     |
| Samples were received on ice.  | True          |                                     |
| Cooler Temperature is acceptable (<=6C, not frozen).                           | True          |                                     |
| Cooler Temperature is recorded.  | True          |                                     |
| WV: Container Temperature is acceptable (<=6C, not frozen).                    | N/A           |                                     |
| WV: Container Temperature is recorded.   | N/A           |                                     |
| COC is present.  | True          |                                     |
| COC is filled out in ink and legible.  | True          |                                     |
| COC is filled out with all pertinent information.                              | True          |                                     |
| There are no discrepancies between the containers received and the COC.        | False         | Refer to Job Narrative for details. |
| Sample containers have legible labels.   | True          |                                     |
| Containers are not broken or leaking.  | True          |                                     |
| Sample collection date/times are provided.                                     | True          |                                     |
| Appropriate sample containers are used.  | True          |                                     |
| Sample bottles are completely filled.  | True          |                                     |
| There is sufficient vol. for all requested analyses.                           | True          |                                     |
| Is the Field Sampler's name present on COC?                                    | True          |                                     |
| Sample custody seals are intact.   | N/A           | Not present.                        |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?    | N/A           |                                     |

## **Appendix B-2**

### **POET Efficacy Sampling Laboratory Analytical Reports**

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 1/9/2023 9:11:21 PM

**JOB DESCRIPTION**

N Monmouth PFAS

**JOB NUMBER**

410-110023-1

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
1/9/2023 9:11:21 PM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 10 |
| QC Sample Results . . . . .        | 11 |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 16 |
| Sample Summary . . . . .           | 17 |
| Chain of Custody . . . . .         | 18 |
| Receipt Checklists . . . . .       | 19 |



## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110023-1

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110023-1

---

**Job ID: 410-110023-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative  
410-110023-1**

**Receipt**

The samples were received on 12/21/2022 11:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.6°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110023-1

## Client Sample ID: 40-28\_POET\_PRE\_20221220

Lab Sample ID: 410-110023-1

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 7.2    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 42     |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 3.6    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 66     |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 40-28\_POET\_MID\_20221220

Lab Sample ID: 410-110023-2

| Analyte                             | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 23     |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 40-28\_POET\_POST\_20221220

Lab Sample ID: 410-110023-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110023-1

**Client Sample ID: 40-28\_POET\_PRE\_20221220**

**Lab Sample ID: 410-110023-1**

Date Collected: 12/20/22 13:33

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 7.2       |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:33 | 1       |
| Perfluorooctanoic acid (PFOA)        | 42        |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:33 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:33 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 3.6       |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:33 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 66        |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:33 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:33 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 109       |           | 31 - 182 |     |      |   | 01/03/23 17:22 | 01/07/23 00:33 | 1       |
| 13C8 PFOA                            | 99        |           | 48 - 162 |     |      |   | 01/03/23 17:22 | 01/07/23 00:33 | 1       |
| 13C9 PFNA                            | 113       |           | 51 - 167 |     |      |   | 01/03/23 17:22 | 01/07/23 00:33 | 1       |
| 13C3 PFHxS                           | 107       |           | 28 - 188 |     |      |   | 01/03/23 17:22 | 01/07/23 00:33 | 1       |
| 13C8 PFOS                            | 109       |           | 51 - 159 |     |      |   | 01/03/23 17:22 | 01/07/23 00:33 | 1       |
| 13C6 PFDA                            | 102       |           | 49 - 163 |     |      |   | 01/03/23 17:22 | 01/07/23 00:33 | 1       |

**Client Sample ID: 40-28\_POET\_MID\_20221220**

**Lab Sample ID: 410-110023-2**

Date Collected: 12/20/22 13:35

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:44 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:44 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:44 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:44 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 23        |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:44 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:44 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 108       |           | 31 - 182 |     |      |   | 01/03/23 17:22 | 01/07/23 00:44 | 1       |
| 13C8 PFOA                            | 102       |           | 48 - 162 |     |      |   | 01/03/23 17:22 | 01/07/23 00:44 | 1       |
| 13C9 PFNA                            | 112       |           | 51 - 167 |     |      |   | 01/03/23 17:22 | 01/07/23 00:44 | 1       |
| 13C3 PFHxS                           | 107       |           | 28 - 188 |     |      |   | 01/03/23 17:22 | 01/07/23 00:44 | 1       |
| 13C8 PFOS                            | 120       |           | 51 - 159 |     |      |   | 01/03/23 17:22 | 01/07/23 00:44 | 1       |
| 13C6 PFDA                            | 101       |           | 49 - 163 |     |      |   | 01/03/23 17:22 | 01/07/23 00:44 | 1       |

**Client Sample ID: 40-28\_POET\_POST\_20221220**

**Lab Sample ID: 410-110023-3**

Date Collected: 12/20/22 13:37

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:55 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:55 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:55 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:55 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:55 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:55 | 1       |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110023-1

**Client Sample ID: 40-28\_POET\_POST\_20221220**

**Lab Sample ID: 410-110023-3**

Date Collected: 12/20/22 13:37

Matrix: Water

Date Received: 12/21/22 11:40

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C4 PFHpA              | 105              |                  | 31 - 182      | 01/03/23 17:22  | 01/07/23 00:55  | 1              |
| 13C8 PFOA               | 99               |                  | 48 - 162      | 01/03/23 17:22  | 01/07/23 00:55  | 1              |
| 13C9 PFNA               | 114              |                  | 51 - 167      | 01/03/23 17:22  | 01/07/23 00:55  | 1              |
| 13C3 PFHxS              | 105              |                  | 28 - 188      | 01/03/23 17:22  | 01/07/23 00:55  | 1              |
| 13C8 PFOS               | 111              |                  | 51 - 159      | 01/03/23 17:22  | 01/07/23 00:55  | 1              |
| 13C6 PFDA               | 99               |                  | 49 - 163      | 01/03/23 17:22  | 01/07/23 00:55  | 1              |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110023-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID         | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|--------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                          | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-110023-1       | 40-28_POET_PRE_20221220  | 109   | 99                 | 113                | 107                | 109                | 102                |
| 410-110023-2       | 40-28_POET_MID_20221220  | 108   | 102                | 112                | 107                | 120                | 101                |
| 410-110023-3       | 40-28_POET_POST_20221220 | 105   | 99                 | 114                | 105                | 111                | 99                 |
| LCS 410-332220/2-A | Lab Control Sample       | 108   | 102                | 112                | 104                | 112                | 95                 |
| LCS 410-332220/3-A | Lab Control Sample Dup   | 101   | 97                 | 107                | 105                | 110                | 99                 |
| MB 410-332220/1-A  | Method Blank             | 110   | 105                | 111                | 115                | 112                | 101                |

### Surrogate Legend

C4PFHA = 13C4 PFHpA  
 C8PFOA = 13C8 PFOA  
 C9PFNA = 13C9 PFNA  
 C3PFHS = 13C3 PFHxS  
 C8PFOS = 13C8 PFOS  
 C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110023-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-332220/1-A**

**Matrix: Water**

**Analysis Batch: 333356**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 332220**

| Analyte                              | MB     | MB        | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |     |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 110       |           | 31 - 182 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C8 PFOA        | 105       |           | 48 - 162 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C9 PFNA        | 111       |           | 51 - 167 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C3 PFHxS       | 115       |           | 28 - 188 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C8 PFOS        | 112       |           | 51 - 159 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C6 PFDA        | 101       |           | 49 - 163 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |

**Lab Sample ID: LCS 410-332220/2-A**

**Matrix: Water**

**Analysis Batch: 333356**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 332220**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 25.7       |               | ng/L |   | 100  | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 28.2       |               | ng/L |   | 110  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 23.0       |               | ng/L |   | 99   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.9       |               | ng/L |   | 101  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 26.4       |               | ng/L |   | 103  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 108       |           | 31 - 182 |
| 13C8 PFOA        | 102       |           | 48 - 162 |
| 13C9 PFNA        | 112       |           | 51 - 167 |
| 13C3 PFHxS       | 104       |           | 28 - 188 |
| 13C8 PFOS        | 112       |           | 51 - 159 |
| 13C6 PFDA        | 95        |           | 49 - 163 |

**Lab Sample ID: LCSD 410-332220/3-A**

**Matrix: Water**

**Analysis Batch: 333356**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 332220**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-----------|
|                                      |             |             |                |      |   |      |             |     |           |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 26.7        |                | ng/L |   | 104  | 51 - 145    | 4   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 27.0        |                | ng/L |   | 105  | 61 - 139    | 4   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 21.6        |                | ng/L |   | 93   | 58 - 134    | 6   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.1        |                | ng/L |   | 98   | 45 - 150    | 3   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 27.0        |                | ng/L |   | 105  | 56 - 138    | 2   | 30        |

Eurofins Lancaster Laboratories Environment Testing, LLC

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110023-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 101              |                  | 31 - 182      |
| 13C8 PFOA               | 97               |                  | 48 - 162      |
| 13C9 PFNA               | 107              |                  | 51 - 167      |
| 13C3 PFHxS              | 105              |                  | 28 - 188      |
| 13C8 PFOS               | 110              |                  | 51 - 159      |
| 13C6 PFDA               | 99               |                  | 49 - 163      |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110023-1

## LCMS

### Prep Batch: 332220

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-110023-1        | 40-28_POET_PRE_20221220  | Total/NA  | Water  | 537 IDA |            |
| 410-110023-2        | 40-28_POET_MID_20221220  | Total/NA  | Water  | 537 IDA |            |
| 410-110023-3        | 40-28_POET_POST_20221220 | Total/NA  | Water  | 537 IDA |            |
| MB 410-332220/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA |            |
| LCS 410-332220/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-332220/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 333356

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-110023-1        | 40-28_POET_PRE_20221220  | Total/NA  | Water  | 537 IDA | 332220     |
| 410-110023-2        | 40-28_POET_MID_20221220  | Total/NA  | Water  | 537 IDA | 332220     |
| 410-110023-3        | 40-28_POET_POST_20221220 | Total/NA  | Water  | 537 IDA | 332220     |
| MB 410-332220/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA | 332220     |
| LCS 410-332220/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA | 332220     |
| LCSD 410-332220/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA | 332220     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110023-1

**Client Sample ID: 40-28\_POET\_PRE\_20221220**

**Lab Sample ID: 410-110023-1**

Date Collected: 12/20/22 13:33

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR          | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D          | ELLE | 01/07/23 00:33       |

**Client Sample ID: 40-28\_POET\_MID\_20221220**

**Lab Sample ID: 410-110023-2**

Date Collected: 12/20/22 13:35

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR          | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D          | ELLE | 01/07/23 00:44       |

**Client Sample ID: 40-28\_POET\_POST\_20221220**

**Lab Sample ID: 410-110023-3**

Date Collected: 12/20/22 13:37

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR          | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D          | ELLE | 01/07/23 00:55       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110023-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110023-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110023-1

---

| Lab Sample ID | Client Sample ID         | Matrix | Collected      | Received       |
|---------------|--------------------------|--------|----------------|----------------|
| 410-110023-1  | 40-28_POET_PRE_20221220  | Water  | 12/20/22 13:33 | 12/21/22 11:40 |
| 410-110023-2  | 40-28_POET_MID_20221220  | Water  | 12/20/22 13:35 | 12/21/22 11:40 |
| 410-110023-3  | 40-28_POET_POST_20221220 | Water  | 12/20/22 13:37 | 12/21/22 11:40 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# Environmental Analysis Request/CI



Lancaster Laboratories  
Environmental

Acct # \_\_\_\_\_ Group # \_\_\_\_\_ Sample # \_\_\_\_\_



410-110023 Chain of Custody

| Client: Sanborn Head & Associates  |            |   |      | Matrix  |  | Analyses Requested               |  |  |   |                   |                  |  |  |  |  | For Lab Use Only |             |   |                           |
|--|------------|---|------|---|--|----------------------------------|--|--|---|-------------------|------------------|--|--|--|--|------------------|-------------|---|---------------------------|
| Project Name/#: N Monmouth PFAS 5197.01  |            | Site ID #:  |      | <input type="checkbox"/> Tissue                                 | <input checked="" type="checkbox"/> Ground | <input type="checkbox"/> Surface | Preservation and Filtration Codes              |  |   |                   |                  |  |  |  |  |                  | SF #: _____ |   |                           |
| Project Manager: Andrew Buchy  |            | P.O. #: 5197.01   |      | <input type="checkbox"/> Sediment                               | <input type="checkbox"/> Potable           | <input type="checkbox"/> NPDES   | <input type="checkbox"/> Field Blank           |  |   |                   |                  |  |  |  |  |                  |             | SCR #: _____  |                           |
| Sampler: Don Kelsey  |            | PWSID #:  |      | <input type="checkbox"/> Soil                                   | <input type="checkbox"/> Water             | <input type="checkbox"/> Other:  | <input type="checkbox"/> Total # of Containers | PFAS 537 Mod with isotope dilution (6 compounds) |   |                   |                  |  |  |  |  |                  |             | Preservation Codes  |                           |
| Phone #: 603-229-1900  |            | Quote #:  |      |   |  |                                  |  |  |   |                   |                  |  |  |  |  |                  |             | H = HCl      T = Thiosulfate<br>N = HNO <sub>3</sub> B = NaOH<br>S = H <sub>2</sub> SO <sub>4</sub> P = H <sub>3</sub> PO <sub>4</sub><br>F = Field Filtered      O = Other |                           |
| State where samples were collected: ME   |            | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>                                  |      | Collection  |  |                                  |  |  |   |                   |                  |  |  |  |  |                  |             | Remarks   |                           |
| Sample Identification  | Date       | Time  | Grab | Composite   | Soil                                       | Water                            | Other:   | Total # of Containers                            |   |                   |                  |  |  |  |  |                  |             |   | Remarks                   |
| 40-28_POET_Pre_20221220  | 12/20/2022 | 13:33   | X    |   |  | X                                |  | 2  | X |                   |                  |  |  |  |  |                  |             |   | Report to RL (no J-flags) |
| 40-28_POET_Mid_20221220  | 12/20/2022 | 13:35   | X    |   |  | X                                |  | 2  | X |                   |                  |  |  |  |  |                  |             |   | Report to RL (no J-flags) |
| 40-28_POET_Post_20221220   | 12/20/2022 | 13:37   | X    |   |  | X                                |  | 4  | X |                   |                  |  |  |  |  |                  |             |   | Report to RL (no J-flags) |
|  |            |   |      |   |  |                                  |  |  |   |                   |                  |  |  |  |  |                  |             |   | (O1/QC)-2                 |
| Turnaround Time Requested (TAT) (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>   |            |   |      | Relinquished by:  |  | Date                             | Time   | Received by:                                     |   | Date              | Time             |  |  |  |  |                  |             |   |                           |
| (Rush TAT is subject to laboratory approval and surcharges)  |            |   |      |   |  |                                  |  |  |   |                   |                  |  |  |  |  |                  |             |   |                           |
| Date results are needed:   |            |   |      | Relinquished by:  |  | Date                             | Time   | Received by:                                     |   | Date              | Time             |  |  |  |  |                  |             |   |                           |
| Rush results requested by (please check): E-Mail <input checked="" type="checkbox"/> Phone <input type="checkbox"/>          |            |   |      | <i>Wade</i>   |  | 12/20/22                         | 13:45  | <del>_____</del>                                 |   | <del>_____</del>  | <del>_____</del> |  |  |  |  |                  |             |   |                           |
| E-mail Address: <i>ABuchy@SANBORNHEAD.COM</i>  |            |   |      | Relinquished by:  |  | Date                             | Time   | Received by:                                     |   | Date              | Time             |  |  |  |  |                  |             |   |                           |
| Phone: _____   |            |   |      |   |  |                                  |  |  |   |                   |                  |  |  |  |  |                  |             |   |                           |
| Data Package Options (please check if required)  |            |   |      | Relinquished by:  |  | Date                             | Time   | Received by:                                     |   | Date              | Time             |  |  |  |  |                  |             |   |                           |
| Level I <input type="checkbox"/> MA MCP <input type="checkbox"/>   |            | Level II <input checked="" type="checkbox"/> CT RCP <input type="checkbox"/>                              |      | Relinquished by:  |  | Date                             | Time   | Received by:                                     |   | Date              | Time             |  |  |  |  |                  |             |   |                           |
| Level VI <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/>  |            | NJ DKQP <input type="checkbox"/> NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B |      |   |  |                                  |  | <i>MVP</i>                                       |   | <i>12/21/2022</i> | <i>11:00</i>     |  |  |  |  |                  |             |   |                           |
| EQUS 4-file format/SHA   |            |   |      | Relinquished by Commercial Carrier:                             |  |                                  |  |  |   |                   |                  |  |  |  |  |                  |             |   |                           |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, format: _____ Standard (flat file) |            |   |      |   |  |                                  |  |  |   |                   |                  |  |  |  |  |                  |             | Temperature upon receipt <i>29/2.6</i> °C   |                           |
|  |            |   |      | UPS _____ FedEx <input checked="" type="checkbox"/> Other _____ |  |                                  |  |  |   |                   |                  |  |  |  |  |                  |             |   |                           |

*lun*

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15

## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-110023-1

**Login Number: 110023**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: McBeth, Jessica**

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.             | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen).        | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen). | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.  | True   |         |
| There are no discrepancies between the containers received and the COC.                    | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                       | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?                | N/A    |         |



 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 1/10/2023 9:58:44 AM

**JOB DESCRIPTION**

N Monmouth PFAS

**JOB NUMBER**

410-110022-1



## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
1/10/2023 9:58:44 AM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 10 |
| QC Sample Results . . . . .        | 11 |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 16 |
| Sample Summary . . . . .           | 17 |
| Chain of Custody . . . . .         | 18 |
| Receipt Checklists . . . . .       | 19 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110022-1

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| ▫              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110022-1

---

**Job ID: 410-110022-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative  
410-110022-1**

**Receipt**

The samples were received on 12/21/2022 11:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.6°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110022-1

## Client Sample ID: 40-30\_POET\_PRE\_20221220

Lab Sample ID: 410-110022-1

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 5.5    |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 32     |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 2.3    |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 18     |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 40-30\_POET\_MID\_20221220

Lab Sample ID: 410-110022-2

| Analyte                             | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 40     |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 40-30\_POET\_POST\_20221220

Lab Sample ID: 410-110022-3

No Detections.

## Client Sample ID: FB-01\_20221220

Lab Sample ID: 410-110022-4

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110022-1

**Client Sample ID: 40-30\_POET\_PRE\_20221220**

**Lab Sample ID: 410-110022-1**

Date Collected: 12/20/22 09:32

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 5.5       |           | 1.6      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:38 | 1       |
| Perfluorooctanoic acid (PFOA)        | 32        |           | 1.6      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:38 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.6      |           | 1.6      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:38 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 2.3       |           | 1.6      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:38 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 18        |           | 1.6      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:38 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.6      |           | 1.6      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:38 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 98        |           | 31 - 182 |     |      |   | 01/03/23 17:22 | 01/06/23 23:38 | 1       |
| 13C8 PFOA                            | 99        |           | 48 - 162 |     |      |   | 01/03/23 17:22 | 01/06/23 23:38 | 1       |
| 13C9 PFNA                            | 111       |           | 51 - 167 |     |      |   | 01/03/23 17:22 | 01/06/23 23:38 | 1       |
| 13C3 PFHxS                           | 102       |           | 28 - 188 |     |      |   | 01/03/23 17:22 | 01/06/23 23:38 | 1       |
| 13C8 PFOS                            | 110       |           | 51 - 159 |     |      |   | 01/03/23 17:22 | 01/06/23 23:38 | 1       |
| 13C6 PFDA                            | 100       |           | 49 - 163 |     |      |   | 01/03/23 17:22 | 01/06/23 23:38 | 1       |

**Client Sample ID: 40-30\_POET\_MID\_20221220**

**Lab Sample ID: 410-110022-2**

Date Collected: 12/20/22 09:35

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:00 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:00 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:00 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:00 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 40        |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:00 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:00 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 102       |           | 31 - 182 |     |      |   | 01/03/23 17:22 | 01/07/23 00:00 | 1       |
| 13C8 PFOA                            | 99        |           | 48 - 162 |     |      |   | 01/03/23 17:22 | 01/07/23 00:00 | 1       |
| 13C9 PFNA                            | 110       |           | 51 - 167 |     |      |   | 01/03/23 17:22 | 01/07/23 00:00 | 1       |
| 13C3 PFHxS                           | 106       |           | 28 - 188 |     |      |   | 01/03/23 17:22 | 01/07/23 00:00 | 1       |
| 13C8 PFOS                            | 110       |           | 51 - 159 |     |      |   | 01/03/23 17:22 | 01/07/23 00:00 | 1       |
| 13C6 PFDA                            | 94        |           | 49 - 163 |     |      |   | 01/03/23 17:22 | 01/07/23 00:00 | 1       |

**Client Sample ID: 40-30\_POET\_POST\_20221220**

**Lab Sample ID: 410-110022-3**

Date Collected: 12/20/22 09:38

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:11 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:11 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:11 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:11 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:11 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:11 | 1       |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110022-1

**Client Sample ID: 40-30\_POET\_POST\_20221220**

**Lab Sample ID: 410-110022-3**

Date Collected: 12/20/22 09:38

Matrix: Water

Date Received: 12/21/22 11:40

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 106       |           | 31 - 182 | 01/03/23 17:22 | 01/07/23 00:11 | 1       |
| 13C8 PFOA        | 96        |           | 48 - 162 | 01/03/23 17:22 | 01/07/23 00:11 | 1       |
| 13C9 PFNA        | 120       |           | 51 - 167 | 01/03/23 17:22 | 01/07/23 00:11 | 1       |
| 13C3 PFHxS       | 112       |           | 28 - 188 | 01/03/23 17:22 | 01/07/23 00:11 | 1       |
| 13C8 PFOS        | 120       |           | 51 - 159 | 01/03/23 17:22 | 01/07/23 00:11 | 1       |
| 13C6 PFDA        | 103       |           | 49 - 163 | 01/03/23 17:22 | 01/07/23 00:11 | 1       |

**Client Sample ID: FB-01\_20221220**

**Lab Sample ID: 410-110022-4**

Date Collected: 12/20/22 09:15

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:22 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:22 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:22 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:22 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:22 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 00:22 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 108       |           | 31 - 182 | 01/03/23 17:22 | 01/07/23 00:22 | 1       |
| 13C8 PFOA        | 103       |           | 48 - 162 | 01/03/23 17:22 | 01/07/23 00:22 | 1       |
| 13C9 PFNA        | 111       |           | 51 - 167 | 01/03/23 17:22 | 01/07/23 00:22 | 1       |
| 13C3 PFHxS       | 112       |           | 28 - 188 | 01/03/23 17:22 | 01/07/23 00:22 | 1       |
| 13C8 PFOS        | 117       |           | 51 - 159 | 01/03/23 17:22 | 01/07/23 00:22 | 1       |
| 13C6 PFDA        | 99        |           | 49 - 163 | 01/03/23 17:22 | 01/07/23 00:22 | 1       |



# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110022-1

**Method: 537 IDA - EPA 537 Isotope Dilution**

**Matrix: Water**

**Prep Type: Total/NA**

| Lab Sample ID       | Client Sample ID         | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|---------------------|--------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                     |                          | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-110022-1        | 40-30_POET_PRE_20221220  | 98  | 99                 | 111                | 102                | 110                | 100                |
| 410-110022-2        | 40-30_POET_MID_20221220  | 102   | 99                 | 110                | 106                | 110                | 94                 |
| 410-110022-3        | 40-30_POET_POST_20221220 | 106   | 96                 | 120                | 112                | 120                | 103                |
| 410-110022-4        | FB-01_20221220           | 108   | 103                | 111                | 112                | 117                | 99                 |
| LCS 410-332220/2-A  | Lab Control Sample       | 108   | 102                | 112                | 104                | 112                | 95                 |
| LCSD 410-332220/3-A | Lab Control Sample Dup   | 101   | 97                 | 107                | 105                | 110                | 99                 |
| MB 410-332220/1-A   | Method Blank             | 110   | 105                | 111                | 115                | 112                | 101                |

**Surrogate Legend**

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110022-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-332220/1-A**

**Matrix: Water**

**Analysis Batch: 333356**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 332220**

| Analyte                              | MB     | MB        | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |     |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 110       |           | 31 - 182 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C8 PFOA        | 105       |           | 48 - 162 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C9 PFNA        | 111       |           | 51 - 167 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C3 PFHxS       | 115       |           | 28 - 188 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C8 PFOS        | 112       |           | 51 - 159 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C6 PFDA        | 101       |           | 49 - 163 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |

**Lab Sample ID: LCS 410-332220/2-A**

**Matrix: Water**

**Analysis Batch: 333356**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 332220**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 25.7       |               | ng/L |   | 100  | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 28.2       |               | ng/L |   | 110  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 23.0       |               | ng/L |   | 99   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.9       |               | ng/L |   | 101  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 26.4       |               | ng/L |   | 103  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 108       |           | 31 - 182 |
| 13C8 PFOA        | 102       |           | 48 - 162 |
| 13C9 PFNA        | 112       |           | 51 - 167 |
| 13C3 PFHxS       | 104       |           | 28 - 188 |
| 13C8 PFOS        | 112       |           | 51 - 159 |
| 13C6 PFDA        | 95        |           | 49 - 163 |

**Lab Sample ID: LCSD 410-332220/3-A**

**Matrix: Water**

**Analysis Batch: 333356**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 332220**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-----------|
|                                      |             |             |                |      |   |      |             |     |           |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 26.7        |                | ng/L |   | 104  | 51 - 145    | 4   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 27.0        |                | ng/L |   | 105  | 61 - 139    | 4   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 21.6        |                | ng/L |   | 93   | 58 - 134    | 6   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.1        |                | ng/L |   | 98   | 45 - 150    | 3   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 27.0        |                | ng/L |   | 105  | 56 - 138    | 2   | 30        |

Eurofins Lancaster Laboratories Environment Testing, LLC

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110022-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 101              |                  | 31 - 182      |
| 13C8 PFOA               | 97               |                  | 48 - 162      |
| 13C9 PFNA               | 107              |                  | 51 - 167      |
| 13C3 PFHxS              | 105              |                  | 28 - 188      |
| 13C8 PFOS               | 110              |                  | 51 - 159      |
| 13C6 PFDA               | 99               |                  | 49 - 163      |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110022-1

## LCMS

### Prep Batch: 332220

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-110022-1        | 40-30_POET_PRE_20221220  | Total/NA  | Water  | 537 IDA |            |
| 410-110022-2        | 40-30_POET_MID_20221220  | Total/NA  | Water  | 537 IDA |            |
| 410-110022-3        | 40-30_POET_POST_20221220 | Total/NA  | Water  | 537 IDA |            |
| 410-110022-4        | FB-01_20221220           | Total/NA  | Water  | 537 IDA |            |
| MB 410-332220/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA |            |
| LCS 410-332220/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-332220/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 333356

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-110022-1        | 40-30_POET_PRE_20221220  | Total/NA  | Water  | 537 IDA | 332220     |
| 410-110022-2        | 40-30_POET_MID_20221220  | Total/NA  | Water  | 537 IDA | 332220     |
| 410-110022-3        | 40-30_POET_POST_20221220 | Total/NA  | Water  | 537 IDA | 332220     |
| 410-110022-4        | FB-01_20221220           | Total/NA  | Water  | 537 IDA | 332220     |
| MB 410-332220/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA | 332220     |
| LCS 410-332220/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA | 332220     |
| LCSD 410-332220/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA | 332220     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110022-1

**Client Sample ID: 40-30\_POET\_PRE\_20221220**

**Lab Sample ID: 410-110022-1**

Date Collected: 12/20/22 09:32

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR          | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D          | ELLE | 01/06/23 23:38       |

**Client Sample ID: 40-30\_POET\_MID\_20221220**

**Lab Sample ID: 410-110022-2**

Date Collected: 12/20/22 09:35

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR          | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D          | ELLE | 01/07/23 00:00       |

**Client Sample ID: 40-30\_POET\_POST\_20221220**

**Lab Sample ID: 410-110022-3**

Date Collected: 12/20/22 09:38

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR          | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D          | ELLE | 01/07/23 00:11       |

**Client Sample ID: FB-01\_20221220**

**Lab Sample ID: 410-110022-4**

Date Collected: 12/20/22 09:15

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR          | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D          | ELLE | 01/07/23 00:22       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110022-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |



# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110022-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110022-1

---

| Lab Sample ID | Client Sample ID         | Matrix | Collected      | Received       |
|---------------|--------------------------|--------|----------------|----------------|
| 410-110022-1  | 40-30_POET_PRE_20221220  | Water  | 12/20/22 09:32 | 12/21/22 11:40 |
| 410-110022-2  | 40-30_POET_MID_20221220  | Water  | 12/20/22 09:35 | 12/21/22 11:40 |
| 410-110022-3  | 40-30_POET_POST_20221220 | Water  | 12/20/22 09:38 | 12/21/22 11:40 |
| 410-110022-4  | FB-01_20221220           | Water  | 12/20/22 09:15 | 12/21/22 11:40 |

---

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



# Environmental Analysis Request



410-110022 Chain of Custody



Lancaster Laboratories  
Environmental

Acct. # \_\_\_\_\_ Group # \_\_\_\_\_ Sample # \_\_\_\_\_

| Client <b>Sanborn Head &amp; Associates</b>   |  |   |      | Matrix   |  |  | Analyses Requested |   |                       |   |  |                  |      |      |      |              | For Lab Use Only  |      |      |  |                           |  |  |  |  |  |  |  |  |
|---|--|---|------|--|--|--|--------------------|---|-----------------------|---|--|------------------|------|------|------|--------------|---|------|------|--|---------------------------|--|--|--|--|--|--|--|--|
| Project Name/#: N. Monmouth PFAS 5197.01  |  | Site ID #:  |      | <input type="checkbox"/> Tissue                                  | <input checked="" type="checkbox"/> Ground | <input type="checkbox"/> Surface   |                    |   |                       |   |  |                  |      |      |      |              | SF #:   |      |      |  |                           |  |  |  |  |  |  |  |  |
| Project Manager: Andrew Buchy   |  | P.O. #: 5197.01   |      | <input type="checkbox"/> Sediment                                | <input type="checkbox"/> Potable           | <input type="checkbox"/> NPDES   |                    |   |                       |   |  |                  |      |      |      |              | SCR #:  |      |      |  |                           |  |  |  |  |  |  |  |  |
| Sampler: Don Kelsey   |  | PWSID #:  |      | <input type="checkbox"/> Soil                                    | <input type="checkbox"/> Water             | <input type="checkbox"/> Other:  |                    |   |                       |   |  |                  |      |      |      |              | Preservation Codes<br>H = HCl      T = Thiosulfate<br>N = HNO <sub>3</sub> B = NaOH<br>S = H <sub>2</sub> SO <sub>4</sub> P = H <sub>3</sub> PO <sub>4</sub><br>F = Field Filtered      O = Other |      |      |  |                           |  |  |  |  |  |  |  |  |
| Phone #: 603-229-1900   |  | Quote #:  |      |  |  |  |                    |   |                       |   |  |                  |      |      |      |              | Total # of Containers<br>PFAS 537 Mod with isotope dilution<br>(6 compounds)  |      |      |  |                           |  |  |  |  |  |  |  |  |
| State where samples were collected: ME  |  | For Compliance Yes <input type="checkbox"/> No <input type="checkbox"/>           |      |  |  |  |                    |   |                       |   |  |                  |      |      |      |              | Remarks   |      |      |  |                           |  |  |  |  |  |  |  |  |
| Sample Identification   |  | Date  | Time | Grab   | Composite                                  | Soil   | Water              | Other:  | Total # of Containers | PFAS 537 Mod with isotope dilution (6 compounds)  |  |                  |      |      |      |              |   |      |      |  | Remarks                   |  |  |  |  |  |  |  |  |
| 40-30_POET_Pre_20221220   |  | 12/20/2022  | 9:32 | X  |  |  | X                  |   | 2                     | X   |  |                  |      |      |      |              |   |      |      |  | Report to RL (no J-flags) |  |  |  |  |  |  |  |  |
| 40-30_POET_Mid_20221220   |  | 12/20/2022  | 9:35 | X  |  |  | X                  |   | 2                     | X   |  |                  |      |      |      |              |   |      |      |  | Report to RL (no J-flags) |  |  |  |  |  |  |  |  |
| 40-30_POET_Post_20221220  |  | 12/20/2022  | 9:38 | X  |  |  | X                  |   | 2                     | X   |  |                  |      |      |      |              |   |      |      |  | Report to RL (no J-flags) |  |  |  |  |  |  |  |  |
| FB-01_20221220  |  | 12/20/2022  | 9:15 | X  |  |  |                    | X   | 2                     | X   |  |                  |      |      |      |              |   |      |      |  | Report to RL (no J-flags) |  |  |  |  |  |  |  |  |
| Turnaround Time Requested (TAT) (please check):   |  | Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>        |      | (Rush TAT is subject to laboratory approval and surcharges)      |  | Relinquished by:   |                    | Date  | Time                  | Received by:  |  | Date             | Time |      |      |              |   |      |      |  |                           |  |  |  |  |  |  |  |  |
| Date results are needed:  |  | E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>                    |      | E-mail Address:  |  | Relinquished by:   |                    | Date  | Time                  | Received by:  |  | Date             | Time |      |      |              |   |      |      |  |                           |  |  |  |  |  |  |  |  |
| Phone:  |  | Data Package Options (please check if required)                                   |      | Level I <input type="checkbox"/> MA MCP <input type="checkbox"/> |  | Level II <input checked="" type="checkbox"/> CT RCP <input type="checkbox"/> |                    | Level VI <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/> |                       | NJ DKQP <input type="checkbox"/> NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B |  | Relinquished by: |      | Date | Time | Received by: |   | Date | Time |  |                           |  |  |  |  |  |  |  |  |
| EQUS 4-file format/SHA  |  | EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |      | If yes, format: Standard (flat file)                             |  | Relinquished by Commercial Carrier:  |                    | Temperature upon receipt  |                       | 2.9/2.6 °C  |  | Relinquished by: |      | Date | Time | Received by: |   | Date | Time |  |                           |  |  |  |  |  |  |  |  |
| UPS <input type="checkbox"/> FedEx <input checked="" type="checkbox"/> Other <input type="checkbox"/> |  |   |      |  |  |  |                    |   |                       |   |  |                  |      |      |      |              |   |      |      |  |                           |  |  |  |  |  |  |  |  |

*dm*

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15

## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-110022-1

**Login Number: 110022**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: McBeth, Jessica**

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |



 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 1/8/2023 10:57:43 PM

**JOB DESCRIPTION**

N Monmouth PFAS

**JOB NUMBER**

410-110269-1

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
1/8/2023 10:57:43 PM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 10 |
| QC Sample Results . . . . .        | 11 |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 16 |
| Sample Summary . . . . .           | 17 |
| Chain of Custody . . . . .         | 18 |
| Receipt Checklists . . . . .       | 19 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110269-1

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110269-1

---

**Job ID: 410-110269-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative  
410-110269-1**

**Receipt**

The samples were received on 12/22/2022 11:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.5°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.





# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110269-1

## Client Sample ID: 40-35\_POET\_Pre\_20221221

Lab Sample ID: 410-110269-1

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 7.0    |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 29     |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 2.2    |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 24     |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 40-35\_POET\_Mid\_20221221

Lab Sample ID: 410-110269-2

No Detections.

## Client Sample ID: 40-35\_POET\_Post\_20221221

Lab Sample ID: 410-110269-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110269-1

**Client Sample ID: 40-35\_POET\_Pre\_20221221**

**Lab Sample ID: 410-110269-1**

Date Collected: 12/21/22 13:31

Matrix: Water

Date Received: 12/22/22 11:00

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 7.0       |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 20:46 | 1       |
| Perfluorooctanoic acid (PFOA)        | 29        |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 20:46 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 20:46 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 2.2       |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 20:46 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 24        |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 20:46 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 20:46 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 102       |           | 31 - 182 |     |      |   | 01/04/23 15:46 | 01/05/23 20:46 | 1       |
| 13C8 PFOA                            | 100       |           | 48 - 162 |     |      |   | 01/04/23 15:46 | 01/05/23 20:46 | 1       |
| 13C9 PFNA                            | 108       |           | 51 - 167 |     |      |   | 01/04/23 15:46 | 01/05/23 20:46 | 1       |
| 13C3 PFHxS                           | 109       |           | 28 - 188 |     |      |   | 01/04/23 15:46 | 01/05/23 20:46 | 1       |
| 13C8 PFOS                            | 107       |           | 51 - 159 |     |      |   | 01/04/23 15:46 | 01/05/23 20:46 | 1       |
| 13C6 PFDA                            | 97        |           | 49 - 163 |     |      |   | 01/04/23 15:46 | 01/05/23 20:46 | 1       |

**Client Sample ID: 40-35\_POET\_Mid\_20221221**

**Lab Sample ID: 410-110269-2**

Date Collected: 12/21/22 13:33

Matrix: Water

Date Received: 12/22/22 11:00

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 20:57 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 20:57 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 20:57 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 20:57 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 20:57 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 20:57 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 103       |           | 31 - 182 |     |      |   | 01/04/23 15:46 | 01/05/23 20:57 | 1       |
| 13C8 PFOA                            | 102       |           | 48 - 162 |     |      |   | 01/04/23 15:46 | 01/05/23 20:57 | 1       |
| 13C9 PFNA                            | 114       |           | 51 - 167 |     |      |   | 01/04/23 15:46 | 01/05/23 20:57 | 1       |
| 13C3 PFHxS                           | 106       |           | 28 - 188 |     |      |   | 01/04/23 15:46 | 01/05/23 20:57 | 1       |
| 13C8 PFOS                            | 109       |           | 51 - 159 |     |      |   | 01/04/23 15:46 | 01/05/23 20:57 | 1       |
| 13C6 PFDA                            | 104       |           | 49 - 163 |     |      |   | 01/04/23 15:46 | 01/05/23 20:57 | 1       |

**Client Sample ID: 40-35\_POET\_Post\_20221221**

**Lab Sample ID: 410-110269-3**

Date Collected: 12/21/22 13:35

Matrix: Water

Date Received: 12/22/22 11:00

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:08 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:08 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:08 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:08 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:08 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:08 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 114       |           | 31 - 182 |     |      |   | 01/04/23 15:46 | 01/05/23 21:08 | 1       |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110269-1

Client Sample ID: 40-35\_POET\_Post\_20221221

Lab Sample ID: 410-110269-3

Date Collected: 12/21/22 13:35

Matrix: Water

Date Received: 12/22/22 11:00

## Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C8 PFOA               | 115              |                  | 48 - 162      | 01/04/23 15:46  | 01/05/23 21:08  | 1              |
| 13C9 PFNA               | 120              |                  | 51 - 167      | 01/04/23 15:46  | 01/05/23 21:08  | 1              |
| 13C3 PFHxS              | 121              |                  | 28 - 188      | 01/04/23 15:46  | 01/05/23 21:08  | 1              |
| 13C8 PFOS               | 119              |                  | 51 - 159      | 01/04/23 15:46  | 01/05/23 21:08  | 1              |
| 13C6 PFDA               | 109              |                  | 49 - 163      | 01/04/23 15:46  | 01/05/23 21:08  | 1              |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110269-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID         | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|--------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                          | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-110269-1       | 40-35_POET_Pre_20221221  | 102   | 100                | 108                | 109                | 107                | 97                 |
| 410-110269-2       | 40-35_POET_Mid_20221221  | 103   | 102                | 114                | 106                | 109                | 104                |
| 410-110269-3       | 40-35_POET_Post_20221221 | 114   | 115                | 120                | 121                | 119                | 109                |
| LCS 410-332570/2-A | Lab Control Sample       | 125   | 125                | 131                | 127                | 128                | 122                |
| LCS 410-332570/3-A | Lab Control Sample Dup   | 120   | 121                | 127                | 121                | 122                | 113                |
| MB 410-332570/1-A  | Method Blank             | 113   | 104                | 115                | 109                | 109                | 101                |

### Surrogate Legend

C4PFHA = 13C4 PFHpA  
 C8PFOA = 13C8 PFOA  
 C9PFNA = 13C9 PFNA  
 C3PFHS = 13C3 PFHxS  
 C8PFOS = 13C8 PFOS  
 C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110269-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-332570/1-A**  
**Matrix: Water**  
**Analysis Batch: 332827**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 332570**

| Analyte                              | MB     | MB        | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |     |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 18:21 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 113       |           | 31 - 182 | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| 13C8 PFOA        | 104       |           | 48 - 162 | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| 13C9 PFNA        | 115       |           | 51 - 167 | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| 13C3 PFHxS       | 109       |           | 28 - 188 | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| 13C8 PFOS        | 109       |           | 51 - 159 | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| 13C6 PFDA        | 101       |           | 49 - 163 | 01/04/23 15:46 | 01/05/23 18:21 | 1       |

**Lab Sample ID: LCS 410-332570/2-A**  
**Matrix: Water**  
**Analysis Batch: 332827**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 332570**

| Analyte                              | Spike Added | LCS    | LCS       | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|
|                                      |             | Result | Qualifier |      |   |      |             |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 22.5   |           | ng/L |   | 88   | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 20.5   |           | ng/L |   | 80   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 22.3   |           | ng/L |   | 87   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.2   |           | ng/L |   | 82   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 20.2   |           | ng/L |   | 85   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 21.6   |           | ng/L |   | 84   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 125       |           | 31 - 182 |
| 13C8 PFOA        | 125       |           | 48 - 162 |
| 13C9 PFNA        | 131       |           | 51 - 167 |
| 13C3 PFHxS       | 127       |           | 28 - 188 |
| 13C8 PFOS        | 128       |           | 51 - 159 |
| 13C6 PFDA        | 122       |           | 49 - 163 |

**Lab Sample ID: LCSD 410-332570/3-A**  
**Matrix: Water**  
**Analysis Batch: 332827**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 332570**

| Analyte                              | Spike Added | LCSD   | LCSD      | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|-----|-----------|
|                                      |             | Result | Qualifier |      |   |      |             |     |           |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 23.5   |           | ng/L |   | 92   | 59 - 145    | 4   | 30        |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 19.8   |           | ng/L |   | 77   | 51 - 145    | 3   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 22.4   |           | ng/L |   | 87   | 61 - 139    | 0   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.5   |           | ng/L |   | 83   | 58 - 134    | 1   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 19.7   |           | ng/L |   | 83   | 45 - 150    | 2   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 21.3   |           | ng/L |   | 83   | 56 - 138    | 1   | 30        |

Eurofins Lancaster Laboratories Environment Testing, LLC

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110269-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 120              |                  | 31 - 182      |
| 13C8 PFOA               | 121              |                  | 48 - 162      |
| 13C9 PFNA               | 127              |                  | 51 - 167      |
| 13C3 PFHxS              | 121              |                  | 28 - 188      |
| 13C8 PFOS               | 122              |                  | 51 - 159      |
| 13C6 PFDA               | 113              |                  | 49 - 163      |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110269-1

## LCMS

### Prep Batch: 332570

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-110269-1        | 40-35_POET_Pre_20221221  | Total/NA  | Water  | 537 IDA |            |
| 410-110269-2        | 40-35_POET_Mid_20221221  | Total/NA  | Water  | 537 IDA |            |
| 410-110269-3        | 40-35_POET_Post_20221221 | Total/NA  | Water  | 537 IDA |            |
| MB 410-332570/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA |            |
| LCS 410-332570/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-332570/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 332827

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-110269-1        | 40-35_POET_Pre_20221221  | Total/NA  | Water  | 537 IDA | 332570     |
| 410-110269-2        | 40-35_POET_Mid_20221221  | Total/NA  | Water  | 537 IDA | 332570     |
| 410-110269-3        | 40-35_POET_Post_20221221 | Total/NA  | Water  | 537 IDA | 332570     |
| MB 410-332570/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA | 332570     |
| LCS 410-332570/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA | 332570     |
| LCSD 410-332570/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA | 332570     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110269-1

**Client Sample ID: 40-35\_POET\_Pre\_20221221**

**Lab Sample ID: 410-110269-1**

Date Collected: 12/21/22 13:31

Matrix: Water

Date Received: 12/22/22 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332570       | QLP7    | ELLE | 01/04/23 15:46       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 332827       | QD9Y    | ELLE | 01/05/23 20:46       |

**Client Sample ID: 40-35\_POET\_Mid\_20221221**

**Lab Sample ID: 410-110269-2**

Date Collected: 12/21/22 13:33

Matrix: Water

Date Received: 12/22/22 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332570       | QLP7    | ELLE | 01/04/23 15:46       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 332827       | QD9Y    | ELLE | 01/05/23 20:57       |

**Client Sample ID: 40-35\_POET\_Post\_20221221**

**Lab Sample ID: 410-110269-3**

Date Collected: 12/21/22 13:35

Matrix: Water

Date Received: 12/22/22 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332570       | QLP7    | ELLE | 01/04/23 15:46       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 332827       | QD9Y    | ELLE | 01/05/23 21:08       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110269-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110269-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110269-1

---

| Lab Sample ID | Client Sample ID         | Matrix | Collected      | Received       |
|---------------|--------------------------|--------|----------------|----------------|
| 410-110269-1  | 40-35_POET_Pre_20221221  | Water  | 12/21/22 13:31 | 12/22/22 11:00 |
| 410-110269-2  | 40-35_POET_Mid_20221221  | Water  | 12/21/22 13:33 | 12/22/22 11:00 |
| 410-110269-3  | 40-35_POET_Post_20221221 | Water  | 12/21/22 13:35 | 12/22/22 11:00 |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



410-110269 Chain of Custody

ories

# Environmental Analysis Request/Chain of Custody

Acc. # \_\_\_\_\_ Group # \_\_\_\_\_ Sample # \_\_\_\_\_

|  |                                      |   |   |                                     |  |                                  |  |                       |  |  |  |      |                         |  |             |  |                           |
|--|--------------------------------------|---|---|-------------------------------------|--|----------------------------------|--|-----------------------|--|--|--|------|-------------------------|--|-------------|--|---------------------------|
| Client: <b>Sanborn Head &amp; Associates</b>   |                                      |   |   | <b>Matrix</b>                       |  |                                  | <b>Analyses Requested</b>                |                       |  |  |  |      | <b>For Lab Use Only</b> |  |             |  |                           |
| Project Name/#: N. Monmouth PFAS 5197.01   |                                      | Site ID #:  |   | <input type="checkbox"/> Tissue     | <input checked="" type="checkbox"/> Ground | <input type="checkbox"/> Surface | <b>Preservation and Filtration Codes</b> |                       |  |  |  |      | SF # _____              |  |             |  |                           |
| Project Manager: Andrew Buchy  |                                      | P.O. #: 5197.01   |   | <input type="checkbox"/> Sediment   | <input type="checkbox"/> Potable           | <input type="checkbox"/> NPDES   | Field Blank                              | Total # of Containers | PFAS 537 Mod with isotope dilution (6 compounds) |  |  |      |                         |  | SCR # _____ |  |                           |
| Sampler: Don Kelsey  |                                      | PWSID #:  |   | <input type="checkbox"/> Soil       | <input type="checkbox"/> Water             | <input type="checkbox"/> Other:  |  |                       |  |  |  |      |                         |  |             |  |                           |
| Phone #: 603-229-1900  |                                      | Quote #:  |   |                                     |  |                                  |  |                       |  | <b>Preservation Codes</b><br>H = HCl      T = Thiosulfate<br>N = HNO <sub>3</sub> B = NaOH<br>S = H <sub>2</sub> SO <sub>4</sub> P = H <sub>3</sub> PO <sub>4</sub><br>F = Field Filtered      O = Other |  |      |                         |  |             |  |                           |
| State where samples were collected: ME   |                                      | For Compliance Yes <input type="checkbox"/> No <input type="checkbox"/> |   | <b>Collection</b>                   |  | Composite                        | Soil                                     | Water                 | Other:   | Total # of Containers  | PFAS 537 Mod with isotope dilution (6 compounds) |      |                         |  |             |  | <b>Remarks</b>            |
|  |                                      | Date  | Time  | Grab                                |  |                                  |  |                       |  |  |  |      |                         |  |             |  |                           |
| Sample Identification  |                                      |   |   |                                     |  |                                  |  |                       |  |  |  |      |                         |  |             |  |                           |
| 40-35_POET_Pre_20221221  |                                      | 12/21/2022  | 13:31   | X                                   |  |                                  | X  |                       | 2  | X  |  |      |                         |  |             |  | Report to RL (no J-flags) |
| 40-35_POET_Mid_20221221  |                                      | 12/21/2022  | 13:33   | X                                   |  |                                  | X  |                       | 2  | X  |  |      |                         |  |             |  | Report to RL (no J-flags) |
| 40-35_POET_Post_20221221   |                                      | 12/21/2022  | 13:35   | X                                   |  |                                  | X  |                       | 4  | X  |  |      |                         |  |             |  | Report to RL (no J-flags) |
|  |                                      |   |   |                                     |  |                                  |  |                       |  |  |  |      |                         |  |             |  |                           |
|  |                                      |   |   |                                     |  |                                  |  |                       |  |  |  |      |                         |  |             |  |                           |
|  |                                      |   |   |                                     |  |                                  |  |                       |  |  |  |      |                         |  |             |  |                           |
|  |                                      |   |   |                                     |  |                                  |  |                       |  |  |  |      |                         |  |             |  |                           |
|  |                                      |   |   |                                     |  |                                  |  |                       |  |  |  |      |                         |  |             |  |                           |
|  |                                      |   |   |                                     |  |                                  |  |                       |  |  |  |      |                         |  |             |  |                           |
| Turnaround Time Requested (TAT) (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |                                      | (Rush TAT is subject to laboratory approval and surcharges)             |   | Relinquished by: <i>[Signature]</i> |  |                                  | Date                                     | Time                  | Received by:                                     |  |  | Date | Time                    |  |             |  |                           |
| Date results are needed:   |                                      |   |   | Relinquished by:                    |  |                                  | Date                                     | Time                  | Received by:                                     |  |  | Date | Time                    |  |             |  |                           |
| Rush results requested by (please check): E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>                   |                                      |   |   | Relinquished by:                    |  |                                  | Date                                     | Time                  | Received by:                                     |  |  | Date | Time                    |  |             |  |                           |
| E-mail Address:  |                                      |   |   | Relinquished by:                    |  |                                  | Date                                     | Time                  | Received by:                                     |  |  | Date | Time                    |  |             |  |                           |
| Phone:   |                                      |   |   | Relinquished by:                    |  |                                  | Date                                     | Time                  | Received by:                                     |  |  | Date | Time                    |  |             |  |                           |
| Data Package Options (please check if required)  |                                      |   |   | Relinquished by:                    |  |                                  | Date                                     | Time                  | Received by:                                     |  |  | Date | Time                    |  |             |  |                           |
| Level I  | <input type="checkbox"/>             | MA MCP  | <input type="checkbox"/>  | Relinquished by:                    |  |                                  | Date                                     | Time                  | Received by:                                     |  |  | Date | Time                    |  |             |  |                           |
| Level II   | <input checked="" type="checkbox"/>  | CT RCP  | <input type="checkbox"/>  | Relinquished by:                    |  |                                  | Date                                     | Time                  | Received by:                                     |  |  | Date | Time                    |  |             |  |                           |
| Level VI   | <input type="checkbox"/>             | TX TRRP-13  | <input type="checkbox"/>  | Relinquished by:                    |  |                                  | Date                                     | Time                  | Received by:                                     |  |  | Date | Time                    |  |             |  |                           |
| NJ DKQP  | <input type="checkbox"/>             | NYSDEC Category   | <input type="checkbox"/>  | A or                                | <input type="checkbox"/>                   | B                                | Relinquished by Commercial Carrier:      |                       |  | Temperature upon receipt <u>4.5</u> °C   |  |      |                         |  |             |  |                           |
| EQIS 4-file format/SHA   |                                      |   |   | Relinquished by:                    |  |                                  | Date                                     | Time                  | Received by:                                     |  |  | Date | Time                    |  |             |  |                           |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  | If yes, format: Standard (flat file) |   | UPS _____ FedEx <input checked="" type="checkbox"/> Other _____ |                                     |  |                                  |  |                       |  |  |  |      |                         |  |             |  |                           |



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-110269-1

Login Number: 110269

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Reiff, Nicole L

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |



## ANALYTICAL REPORT

|                 |  |
|-----------------|--|
| Lab Number:     | L2258490   |
| Client:         | Sanborn, Head & Associates, Inc.<br>20 Foundry Street<br>Concord, NH 03301 |
| ATTN:           | Andrew Buchy   |
| Phone:          | (603) 229-1900   |
| Project Name:   | N. MONMOUTH PFAS   |
| Project Number: | 5197.01  |
| Report Date:    | 11/29/22   |

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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

---

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



**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258490  
**Report Date:** 11/29/22

| <b>Alpha<br/>Sample ID</b> | <b>Client ID</b>         | <b>Matrix</b> | <b>Sample<br/>Location</b> | <b>Collection<br/>Date/Time</b> | <b>Receive Date</b> |
|----------------------------|--------------------------|---------------|----------------------------|---------------------------------|---------------------|
| L2258490-01                | 46-63_POET_PRE_20221019  | WATER         | N. MONMOUTH, ME            | 10/19/22 15:10                  | 10/20/22            |
| L2258490-02                | 46-63_POET_MID_20221019  | WATER         | N. MONMOUTH, ME            | 10/19/22 15:13                  | 10/20/22            |
| L2258490-03                | 46-63_POET_POST_20221019 | WATER         | N. MONMOUTH, ME            | 10/19/22 15:15                  | 10/20/22            |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258490  
**Report Date:** 11/29/22

### 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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258490  
**Report Date:** 11/29/22

### Case Narrative (continued)

#### Sample Receipt

L2258490-02: The sample identified as "46-63\_POET\_MID\_20221019" on the chain of custody was identified as "43-63\_POET\_MID\_20221019" on the container label. At the client's request, the sample is reported as "46-63\_POET\_MID\_20221019".

L2258490-03: The sample identified as "46-63\_POET\_POST\_20221019" on the chain of custody was identified as "46-63\_POET\_PRE\_20221019" on the container label. At the client's request, the sample is reported as "46-63\_POET\_POST\_20221019".

#### Perfluorinated Alkyl Acids by Isotope Dilution

L2258490-01, -02, and -03: Sample results for Perfluorohexanesulfonic Acid (PFHxS), Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) are reported as the sum of the branched and linear isomers.

L2258490-03: The Post result is greater than the Mid result. The sample containers were verified as being labeled correctly by the laboratory.

WG1706775-1 and WG1706775-2: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

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

Authorized Signature:

 Darian Dailey

Title: Technical Director/Representative

Date: 11/29/22

# ORGANICS

# SEMIVOLATILES

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258490  
**Report Date:** 11/29/22

**SAMPLE RESULTS**

Lab ID: L2258490-01  
 Client ID: 46-63\_POET\_PRE\_20221019  
 Sample Location: N. MONMOUTH, ME

Date Collected: 10/19/22 15:10  
 Date Received: 10/20/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/23/22 22:06  
 Analyst: AC

Extraction Method: ALPHA 23528  
 Extraction Date: 11/01/22 17:45

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | 4.43   |           | ng/l  | 1.77 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | 2.06   |           | ng/l  | 1.77 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | 23.0   |           | ng/l  | 1.77 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.77 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 10.7   |           | ng/l  | 1.77 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.77 | --  | 1               |
| PFAS, Total (6)   | 40.2   |           | ng/l  | 1.77 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 75         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 103        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 96         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 92         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 103        |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 87         |           | 62-124              |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258490  
**Report Date:** 11/29/22

**SAMPLE RESULTS**

**Lab ID:** L2258490-02  
**Client ID:** 46-63\_POET\_MID\_20221019  
**Sample Location:** N. MONMOUTH, ME

**Date Collected:** 10/19/22 15:13  
**Date Received:** 10/20/22  
**Field Prep:** Not Specified

**Sample Depth:**

**Matrix:** Water  
**Analytical Method:** 134,LCMSMS-ID  
**Analytical Date:** 11/24/22 06:56  
**Analyst:** AC

**Extraction Method:** ALPHA 23528  
**Extraction Date:** 11/01/22 17:45

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.79 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.79 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.79 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.79 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 8.57   |           | ng/l  | 1.79 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.79 | --  | 1               |
| PFAS, Total (6)   | 8.57   |           | ng/l  | 1.79 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 77         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 98         |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 97         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 97         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 92         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 95         |           | 62-124              |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258490  
**Report Date:** 11/29/22

**SAMPLE RESULTS**

Lab ID: L2258490-03  
 Client ID: 46-63\_POET\_POST\_20221019  
 Sample Location: N. MONMOUTH, ME

Date Collected: 10/19/22 15:15  
 Date Received: 10/20/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/23/22 22:23  
 Analyst: AC

Extraction Method: ALPHA 23528  
 Extraction Date: 11/01/22 17:45

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.80 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.80 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.80 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.80 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 9.93   |           | ng/l  | 1.80 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.80 | --  | 1               |
| PFAS, Total (6)   | 9.93   |           | ng/l  | 1.80 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 83         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 92         |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 96         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 100        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 95         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 97         |           | 62-124              |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258490  
**Report Date:** 11/29/22

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 11/07/22 17:38  
Analyst: RS

Extraction Method: ALPHA 23528  
Extraction Date: 11/01/22 17:45

| Parameter  | Result | Qualifier | Units | RL   | MDL |
|--|--------|-----------|-------|------|-----|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1706775-1 |        |           |       |      |     |
| Perfluoroheptanoic Acid (PFHpA)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorohexanesulfonic Acid (PFHxS)   | ND     |           | ng/l  | 2.00 | --  |
| Perfluorooctanoic Acid (PFOA)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorononanoic Acid (PFNA)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorooctanesulfonic Acid (PFOS)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorodecanoic Acid (PFDA)  | ND     |           | ng/l  | 2.00 | --  |
| PFAS, Total (6)  | ND     |           | ng/l  | 2.00 | --  |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258490  
**Report Date:** 11/29/22

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 11/07/22 17:38  
Analyst: RS

Extraction Method: ALPHA 23528  
Extraction Date: 11/01/22 17:45

| Parameter  | Result | Qualifier | Units | RL | MDL |
|--|--------|-----------|-------|----|-----|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1706775-1 |        |           |       |    |     |

| Surrogate (Extracted Internal Standard)  | %Recovery  | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[13C4]Butanoic Acid (MPFBA)   | 115        |           | 58-132              |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)  | 137        |           | 62-163              |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)  | 114        |           | 70-131              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 98         |           | 12-142              |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 98         |           | 57-129              |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 98         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 128        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)  | 122        |           | 62-129              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 143        |           | 14-147              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)  | 113        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)  | 115        |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 122        |           | 62-124              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 152        |           | 10-162              |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | <b>117</b> | Q         | 24-116              |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | <b>146</b> | Q         | 55-137              |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)  | 50         |           | 5-112               |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 103        |           | 27-126              |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 126        |           | 48-131              |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | <b>151</b> | Q         | 22-136              |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 119        |           | 10-165              |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 174        |           | 10-206              |



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** N. MONMOUTH PFAS

**Project Number:** 5197.01

**Lab Number:** L2258490

**Report Date:** 11/29/22

| <b>Parameter</b>  | <b>LCS<br/>%Recovery</b> | <b>Qual</b> | <b>LCSD<br/>%Recovery</b> | <b>Qual</b> | <b>%Recovery<br/>Limits</b> | <b>RPD</b> | <b>Qual</b> | <b>RPD<br/>Limits</b> |
|---|--------------------------|-------------|---------------------------|-------------|-----------------------------|------------|-------------|-----------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1706775-2 |                          |             |                           |             |                             |            |             |                       |
| Perfluoroheptanoic Acid (PFHpA)   | 97                       |             | -                         |             | 58-159                      | -          |             | 30                    |
| Perfluorohexanesulfonic Acid (PFHxS)  | 109                      |             | -                         |             | 69-177                      | -          |             | 30                    |
| Perfluorooctanoic Acid (PFOA)   | 87                       |             | -                         |             | 63-159                      | -          |             | 30                    |
| Perfluorononanoic Acid (PFNA)   | 101                      |             | -                         |             | 68-171                      | -          |             | 30                    |
| Perfluorooctanesulfonic Acid (PFOS)   | 112                      |             | -                         |             | 52-151                      | -          |             | 30                    |
| Perfluorodecanoic Acid (PFDA)   | 107                      |             | -                         |             | 63-171                      | -          |             | 30                    |

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: N. MONMOUTH PFAS

Lab Number: L2258490

Project Number: 5197.01

Report Date: 11/29/22

| Parameter   | LCS<br>%Recovery | Qual | LCS<br>%Recovery | Qual | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits |
|---|------------------|------|------------------|------|---------------------|-----|------|---------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1706775-2 |                  |      |                  |      |                     |     |      |               |

| Surrogate (Extracted Internal Standard)  | LCS<br>%Recovery | Qual | LCS<br>%Recovery | Qual | Acceptance<br>Criteria |
|--|------------------|------|------------------|------|------------------------|
| Perfluoro[13C4]Butanoic Acid (MPFBA)   | 109              |      |                  |      | 58-132                 |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)  | 127              |      |                  |      | 62-163                 |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)  | 107              |      |                  |      | 70-131                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 98               |      |                  |      | 12-142                 |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 98               |      |                  |      | 57-129                 |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 98               |      |                  |      | 60-129                 |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 123              |      |                  |      | 71-134                 |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)  | 119              |      |                  |      | 62-129                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 139              |      |                  |      | 14-147                 |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)  | 106              |      |                  |      | 59-139                 |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)  | 113              |      |                  |      | 69-131                 |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 114              |      |                  |      | 62-124                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 146              |      |                  |      | 10-162                 |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | 112              |      |                  |      | 24-116                 |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | 132              |      |                  |      | 55-137                 |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)  | 35               |      |                  |      | 5-112                  |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 103              |      |                  |      | 27-126                 |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 120              |      |                  |      | 48-131                 |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | 147              | Q    |                  |      | 22-136                 |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 106              |      |                  |      | 10-165                 |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 166              |      |                  |      | 10-206                 |

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** N. MONMOUTH PFAS

**Project Number:** 5197.01

**Lab Number:** L2258490

**Report Date:** 11/29/22

| <i>Parameter</i>  | <i>Native Sample</i> | <i>MS Added</i> | <i>MS Found</i> | <i>MS %Recovery</i> | <i>Qual</i> | <i>MSD Found</i> | <i>MSD %Recovery</i> | <i>Qual</i> | <i>Recovery Limits</i> | <i>RPD</i> | <i>Qual</i> | <i>RPD Limits</i> |
|---|----------------------|-----------------|-----------------|---------------------|-------------|------------------|----------------------|-------------|------------------------|------------|-------------|-------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1706775-3 QC Sample: L2258484-01 Client ID: MS Sample |                      |                 |                 |                     |             |                  |                      |             |                        |            |             |                   |
| Perfluoroheptanoic Acid (PFHpA)   | 3.38                 | 36              | 40.6            | 103                 |             | -                | -                    |             | 58-159                 | -          |             | 30                |
| Perfluorohexanesulfonic Acid (PFHxS)  | 5.14                 | 32.9            | 41.9            | 112                 |             | -                | -                    |             | 69-177                 | -          |             | 30                |
| Perfluorooctanoic Acid (PFOA)   | 29.1                 | 36              | 62.2            | 92                  |             | -                | -                    |             | 63-159                 | -          |             | 30                |
| Perfluorononanoic Acid (PFNA)   | ND                   | 36              | 38.3            | 106                 |             | -                | -                    |             | 68-171                 | -          |             | 30                |
| Perfluorooctanesulfonic Acid (PFOS)   | 11.5                 | 33.4            | 43.5            | 96                  |             | -                | -                    |             | 52-151                 | -          |             | 30                |
| Perfluorodecanoic Acid (PFDA)   | ND                   | 36              | 36.6            | 102                 |             | -                | -                    |             | 63-171                 | -          |             | 30                |

| <i>Surrogate (Extracted Internal Standard)</i>     | <i>MS % Recovery</i> | <i>Qualifier</i> | <i>MSD % Recovery</i> | <i>Qualifier</i> | <i>Acceptance Criteria</i> |
|--|----------------------|------------------|-----------------------|------------------|----------------------------|
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 113                  |                  |                       |                  | 62-124                     |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 95                   |                  |                       |                  | 60-129                     |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 122                  |                  |                       |                  | 71-134                     |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 110                  |                  |                       |                  | 69-131                     |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 120                  |                  |                       |                  | 62-129                     |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 106                  |                  |                       |                  | 59-139                     |

## Lab Duplicate Analysis

Batch Quality Control

Project Name: N. MONMOUTH PFAS

Project Number: 5197.01

Lab Number: L2258490

Report Date: 11/29/22

| Parameter  | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|--|---------------|------------------|-------|-----|------|------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1706775-4 QC Sample: L2258484-02 Client ID: DUP Sample |               |                  |       |     |      |            |
| Perfluoroheptanoic Acid (PFHpA)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorohexanesulfonic Acid (PFHxS)   | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorooctanoic Acid (PFOA)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorononanoic Acid (PFNA)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorooctanesulfonic Acid (PFOS)  | 20.7          | 105              | ng/l  | 134 | Q    | 30         |
| Perfluorodecanoic Acid (PFDA)  | ND            | ND               | ng/l  | NC  |      | 30         |

| Surrogate (Extracted Internal Standard)            | %Recovery | Qualifier | %Recovery | Qualifier | Acceptance Criteria |
|--|-----------|-----------|-----------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 89        |           | 87        |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 123       |           | 125       |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 114       |           | 112       |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 98        |           | 95        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 107       |           | 101       |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 113       |           | 108       |           | 62-124              |

**Project Name:** N. MONMOUTH PFAS

**Project Number:** 5197.01

Serial\_No:11292212:18

**Lab Number:** L2258490

**Report Date:** 11/29/22

**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

**Cooler Information**

| <b>Cooler</b> | <b>Custody Seal</b> |
|---------------|---------------------|
| A             | Absent              |

**Container Information**

| <b>Container ID</b> | <b>Container Type</b>          | <b>Cooler</b> | <b>Initial pH</b> | <b>Final pH</b> | <b>Temp deg C</b> | <b>Pres</b> | <b>Seal</b> | <b>Frozen Date/Time</b> | <b>Analysis(*)</b>       |
|---------------------|--------------------------------|---------------|-------------------|-----------------|-------------------|-------------|-------------|-------------------------|--------------------------|
| L2258490-01A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258490-01B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258490-02A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258490-02B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258490-03A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258490-03B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11292212:18  
**Lab Number:** L2258490  
**Report Date:** 11/29/22

### PFAS PARAMETER SUMMARY

| Parameter   | Acronym      | CAS Number  |
|---|--------------|-------------|
| <b>PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)</b>                          |              |             |
| 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    |
| <b>PERFLUOROALKYL SULFONIC ACIDS (PFSAs)</b>                            |              |             |
| 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    |
| <b>FLUOROTELOMERS</b>   |              |             |
| 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 |
| <b>PERFLUOROALKANE SULFONAMIDES (FASAs)</b>                             |              |             |
| Perfluorooctanesulfonamide  | FOSA/PFOSA   | 754-91-6    |
| N-Ethyl Perfluorooctane Sulfonamide                                     | NEtFOSA      | 4151-50-2   |
| N-Methyl Perfluorooctane Sulfonamide                                    | NMeFOSA      | 31506-32-8  |
| <b>PERFLUOROALKANE SULFONYL SUBSTANCES</b>                              |              |             |
| 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   |
| <b>PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS</b>                  |              |             |
| 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 |
| <b>CHLORO-PERFLUOROALKYL SULFONIC ACIDS</b>                             |              |             |
| 11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid                      | 11Cl-PF3OUdS | 763051-92-9 |
| 9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid                        | 9Cl-PF3ONS   | 756426-58-1 |
| <b>PERFLUOROETHER SULFONIC ACIDS (PFESAs)</b>                           |              |             |
| Perfluoro(2-Ethoxyethane)Sulfonic Acid                                  | PFEESA       | 113507-82-7 |
| <b>PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)</b>               |              |             |
| 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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11292212:18  
**Lab Number:** L2258490  
**Report Date:** 11/29/22

### 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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258490  
**Report Date:** 11/29/22

## 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.)<br><br>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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258490  
**Report Date:** 11/29/22

### 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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258490  
**Report Date:** 11/29/22

**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.)

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258490  
**Report Date:** 11/29/22

## REFERENCES

- 134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

## LIMITATION OF LIABILITIES

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

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



## 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, NO<sub>2</sub>, NO<sub>3</sub>.

### 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, SM4500CI-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, **LCHAT 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.

10/19/22

2258490

### CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab:

ALPHA Job #



#### Project Information

**Project Name:** N. Monmouth PFAS  
**Project Location:** N. Monmouth, ME  
**Project #:** 5197.01  
**Project Manager:** Andrew Buchy  
**ALPHA Quote #:** 403080

#### Report Information / Data Deliverables

FAX  EMAIL   
ADEx  Add'l Deliverables

#### Billing Information

Same as Client Info  
PO #: 5197.01

Westborough, MA    Mansfield, MA  
TEL: 508-898-9220    TEL: 508-822-9300  
FAX: 508-898-9193    FAX: 508-822-3288

#### Regulatory Requirements/Report Limits

State/Fed Program          Criteria

#### Client Information

**Client:** Sanborn Head & Associates  
**Address:** 20 Foundry Street, Concord, NH  
**Phone:** 603-229-1900  
**Fax:**  
**Email:** [swhitncy@sanbornhead.com](mailto:swhitncy@sanbornhead.com)  
[abuchy@sanbornhead.com](mailto:abuchy@sanbornhead.com)

#### Turn-Around Time

Standard  
 Rush (Only if Pre-Approved)

Due Date:

These samples have been previously analyzed by Alpha

#### Other Project Specific Requirements/Comments/Detection Limits:

Level II Data Package, EQUIS 4-File format, SHA Standard flat file  
MEDEP v.6 text EDD

#### ANALYSIS

#### SAMPLING HANDLING

Filtration

Done  
 Not Needed  
 Lab to do Preservation  
 Lab to do (please specify below)

Sample Specific Comments

TOTAL # BOTTLES

| ALPHA Lab ID<br>(Lab Use Only) | Sample ID                | Collection |       | Sample Matrix | Sampler's<br>Initials | PPAS 537-1 Mod with Isotope Dilution (6<br>compounds) | ANALYSIS |  |  |  |  |  |  |  |  |  |  | TOTAL # BOTTLES |  |  |  |  |  |
|--------------------------------|--------------------------|------------|-------|---------------|-----------------------|---|----------|--|--|--|--|--|--|--|--|--|--|-----------------|--|--|--|--|--|
|                                |                          | Date       | Time  |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
| 01                             | 46-63_POET_Pre_20221019  | 10/19/22   | 15:10 | GW            | DK                    | X   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
| 02                             | 46-63_POET_Mid_20221019  | ↓          | 15:13 | GW            | DK                    | X   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
| 03                             | 46-63_POET_Post_20221019 | ↓          | 15:15 | GW            | DK                    | X   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |
|                                |                          |            |       |               |                       |   |          |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |

Container Type: P  
Preservative: 0

|                  |                |              |                |
|------------------|----------------|--------------|----------------|
| Relinquished By: | Date/Time      | Received By: | Date/Time      |
| Tom Kaswick      | 10/19/22 19:15 | Tom Kaswick  | 10/19/22 17:30 |
|                  | 19:20          |              | 10/19/22 19:20 |
|                  | 10/19/22 19:30 |              | 19:30          |

*Handwritten signature and notes:* ... 10/19/22 20:45 ...

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 1/30/2023 9:37:59 PM

**JOB DESCRIPTION**

N Monmouth PFAS 5197.01

**JOB NUMBER**

410-112199-1

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
1/30/2023 9:37:59 PM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.


Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---





# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 10 |
| QC Sample Results . . . . .        | 11 |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 16 |
| Sample Summary . . . . .           | 17 |
| Chain of Custody . . . . .         | 18 |
| Receipt Checklists . . . . .       | 19 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112199-1

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| ▫              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112199-1

---

## Job ID: 410-112199-1

---

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

### Narrative

---

Job Narrative  
410-112199-1

### Receipt

The samples were received on 1/13/2023 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.7°C

### PFAS

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112199-1

## Client Sample ID: 46-63\_PRE\_20230112

Lab Sample ID: 410-112199-1

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 6.2    |           | 1.8 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 32     |           | 1.8 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 2.4    |           | 1.8 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 6.0    |           | 1.8 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 46-63\_MID\_20230112

Lab Sample ID: 410-112199-2

No Detections.

## Client Sample ID: 46-63\_POST\_20230112

Lab Sample ID: 410-112199-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112199-1

**Client Sample ID: 46-63\_PRE\_20230112**

**Lab Sample ID: 410-112199-1**

Date Collected: 01/12/23 15:10

Matrix: Water

Date Received: 01/13/23 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 6.2       |           | 1.8      |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:22 | 1       |
| Perfluorooctanoic acid (PFOA)        | 32        |           | 1.8      |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:22 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.8      |           | 1.8      |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:22 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 2.4       |           | 1.8      |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:22 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 6.0       |           | 1.8      |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:22 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.8      |           | 1.8      |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:22 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 104       |           | 31 - 182 |     |      |   | 01/26/23 07:18 | 01/28/23 23:22 | 1       |
| 13C8 PFOA                            | 85        |           | 48 - 162 |     |      |   | 01/26/23 07:18 | 01/28/23 23:22 | 1       |
| 13C9 PFNA                            | 88        |           | 51 - 167 |     |      |   | 01/26/23 07:18 | 01/28/23 23:22 | 1       |
| 13C3 PFHxS                           | 92        |           | 28 - 188 |     |      |   | 01/26/23 07:18 | 01/28/23 23:22 | 1       |
| 13C8 PFOS                            | 81        |           | 51 - 159 |     |      |   | 01/26/23 07:18 | 01/28/23 23:22 | 1       |
| 13C6 PFDA                            | 77        |           | 49 - 163 |     |      |   | 01/26/23 07:18 | 01/28/23 23:22 | 1       |

**Client Sample ID: 46-63\_MID\_20230112**

**Lab Sample ID: 410-112199-2**

Date Collected: 01/12/23 15:15

Matrix: Water

Date Received: 01/13/23 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7      |           | 1.7      |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:34 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:34 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:34 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7      |           | 1.7      |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:34 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.7      |           | 1.7      |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:34 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:34 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 91        |           | 31 - 182 |     |      |   | 01/26/23 07:18 | 01/28/23 23:34 | 1       |
| 13C8 PFOA                            | 80        |           | 48 - 162 |     |      |   | 01/26/23 07:18 | 01/28/23 23:34 | 1       |
| 13C9 PFNA                            | 94        |           | 51 - 167 |     |      |   | 01/26/23 07:18 | 01/28/23 23:34 | 1       |
| 13C3 PFHxS                           | 90        |           | 28 - 188 |     |      |   | 01/26/23 07:18 | 01/28/23 23:34 | 1       |
| 13C8 PFOS                            | 88        |           | 51 - 159 |     |      |   | 01/26/23 07:18 | 01/28/23 23:34 | 1       |
| 13C6 PFDA                            | 83        |           | 49 - 163 |     |      |   | 01/26/23 07:18 | 01/28/23 23:34 | 1       |

**Client Sample ID: 46-63\_POST\_20230112**

**Lab Sample ID: 410-112199-3**

Date Collected: 01/12/23 15:20

Matrix: Water

Date Received: 01/13/23 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7      |           | 1.7      |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:45 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:45 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:45 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7      |           | 1.7      |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:45 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.7      |           | 1.7      |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:45 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/26/23 07:18 | 01/28/23 23:45 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 89        |           | 31 - 182 |     |      |   | 01/26/23 07:18 | 01/28/23 23:45 | 1       |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112199-1

Client Sample ID: 46-63\_POST\_20230112

Lab Sample ID: 410-112199-3

Date Collected: 01/12/23 15:20

Matrix: Water

Date Received: 01/13/23 09:50

## Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C8 PFOA               | 81               |                  | 48 - 162      | 01/26/23 07:18  | 01/28/23 23:45  | 1              |
| 13C9 PFNA               | 87               |                  | 51 - 167      | 01/26/23 07:18  | 01/28/23 23:45  | 1              |
| 13C3 PFHxS              | 80               |                  | 28 - 188      | 01/26/23 07:18  | 01/28/23 23:45  | 1              |
| 13C8 PFOS               | 89               |                  | 51 - 159      | 01/26/23 07:18  | 01/28/23 23:45  | 1              |
| 13C6 PFDA               | 82               |                  | 49 - 163      | 01/26/23 07:18  | 01/28/23 23:45  | 1              |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112199-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID       | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                        | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-112199-1       | 46-63_PRE_20230112     | 104   | 85                 | 88                 | 92                 | 81                 | 77                 |
| 410-112199-2       | 46-63_MID_20230112     | 91  | 80                 | 94                 | 90                 | 88                 | 83                 |
| 410-112199-3       | 46-63_POST_20230112    | 89  | 81                 | 87                 | 80                 | 89                 | 82                 |
| LCS 410-338788/3-A | Lab Control Sample     | 85  | 75                 | 86                 | 82                 | 89                 | 84                 |
| LCS 410-338788/4-A | Lab Control Sample Dup | 91  | 87                 | 102                | 93                 | 106                | 91                 |
| MB 410-338788/1-A  | Method Blank           | 77  | 71                 | 92                 | 77                 | 81                 | 72                 |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112199-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-338788/1-A**  
**Matrix: Water**  
**Analysis Batch: 339461**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 338788**

| Analyte                              | MB     | MB        | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |     |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | <2.0   |           | 2.0 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0   |           | 2.0 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0   |           | 2.0 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 21:42 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 77        |           | 31 - 182 | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| 13C8 PFOA        | 71        |           | 48 - 162 | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| 13C9 PFNA        | 92        |           | 51 - 167 | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| 13C3 PFHxS       | 77        |           | 28 - 188 | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| 13C8 PFOS        | 81        |           | 51 - 159 | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| 13C6 PFDA        | 72        |           | 49 - 163 | 01/26/23 07:18 | 01/28/23 21:42 | 1       |

**Lab Sample ID: LCS 410-338788/3-A**  
**Matrix: Water**  
**Analysis Batch: 339461**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 338788**

| Analyte                              | Spike Added | LCS    | LCS       | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|
|                                      |             | Result | Qualifier |      |   |      |             |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 27.8   |           | ng/L |   | 109  | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 33.6   |           | ng/L |   | 131  | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 30.2   |           | ng/L |   | 118  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 26.2   |           | ng/L |   | 112  | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 27.9   |           | ng/L |   | 118  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 29.1   |           | ng/L |   | 114  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 85        |           | 31 - 182 |
| 13C8 PFOA        | 75        |           | 48 - 162 |
| 13C9 PFNA        | 86        |           | 51 - 167 |
| 13C3 PFHxS       | 82        |           | 28 - 188 |
| 13C8 PFOS        | 89        |           | 51 - 159 |
| 13C6 PFDA        | 84        |           | 49 - 163 |

**Lab Sample ID: LCSD 410-338788/4-A**  
**Matrix: Water**  
**Analysis Batch: 339461**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 338788**

| Analyte                              | Spike Added | LCSD   | LCSD      | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|-----|-----------|
|                                      |             | Result | Qualifier |      |   |      |             |     |           |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 32.9   |           | ng/L |   | 128  | 59 - 145    | 17  | 30        |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 35.1   |           | ng/L |   | 137  | 51 - 145    | 4   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 30.0   |           | ng/L |   | 117  | 61 - 139    | 1   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 27.6   |           | ng/L |   | 118  | 58 - 134    | 5   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 27.7   |           | ng/L |   | 117  | 45 - 150    | 1   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 24.6   |           | ng/L |   | 96   | 56 - 138    | 17  | 30        |



# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112199-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 91               |                  | 31 - 182      |
| 13C8 PFOA               | 87               |                  | 48 - 162      |
| 13C9 PFNA               | 102              |                  | 51 - 167      |
| 13C3 PFHxS              | 93               |                  | 28 - 188      |
| 13C8 PFOS               | 106              |                  | 51 - 159      |
| 13C6 PFDA               | 91               |                  | 49 - 163      |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112199-1

## LCMS

### Prep Batch: 338788

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-112199-1        | 46-63_PRE_20230112     | Total/NA  | Water  | 537 IDA |            |
| 410-112199-2        | 46-63_MID_20230112     | Total/NA  | Water  | 537 IDA |            |
| 410-112199-3        | 46-63_POST_20230112    | Total/NA  | Water  | 537 IDA |            |
| MB 410-338788/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-338788/3-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-338788/4-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 339461

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-112199-1        | 46-63_PRE_20230112     | Total/NA  | Water  | 537 IDA | 338788     |
| 410-112199-2        | 46-63_MID_20230112     | Total/NA  | Water  | 537 IDA | 338788     |
| 410-112199-3        | 46-63_POST_20230112    | Total/NA  | Water  | 537 IDA | 338788     |
| MB 410-338788/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 338788     |
| LCS 410-338788/3-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 338788     |
| LCSD 410-338788/4-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 338788     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112199-1

**Client Sample ID: 46-63\_PRE\_20230112**

**Lab Sample ID: 410-112199-1**

Date Collected: 01/12/23 15:10

Matrix: Water

Date Received: 01/13/23 09:50

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 338788       | M4QQ          | ELLE | 01/26/23 07:18       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 339461       | JVK6          | ELLE | 01/28/23 23:22       |

**Client Sample ID: 46-63\_MID\_20230112**

**Lab Sample ID: 410-112199-2**

Date Collected: 01/12/23 15:15

Matrix: Water

Date Received: 01/13/23 09:50

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 338788       | M4QQ          | ELLE | 01/26/23 07:18       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 339461       | JVK6          | ELLE | 01/28/23 23:34       |

**Client Sample ID: 46-63\_POST\_20230112**

**Lab Sample ID: 410-112199-3**

Date Collected: 01/12/23 15:20

Matrix: Water

Date Received: 01/13/23 09:50

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 338788       | M4QQ          | ELLE | 01/26/23 07:18       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 339461       | JVK6          | ELLE | 01/28/23 23:45       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112199-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112199-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112199-1

---

| Lab Sample ID | Client Sample ID    | Matrix | Collected      | Received       |
|---------------|---------------------|--------|----------------|----------------|
| 410-112199-1  | 46-63_PRE_20230112  | Water  | 01/12/23 15:10 | 01/13/23 09:50 |
| 410-112199-2  | 46-63_MID_20230112  | Water  | 01/12/23 15:15 | 01/13/23 09:50 |
| 410-112199-3  | 46-63_POST_20230112 | Water  | 01/12/23 15:20 | 01/13/23 09:50 |

1

2

3

4

5

6

7

8

9

10

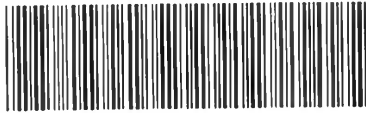
11

12

13

14

15



410-112199 Chain of Custody

ries

# Environmental Analysis Request/Chain of Custody

Acct. #

Group #

Sample #

|  |  |   |  |   |  |   |  |                                      |  |   |  |                                 |  |       |  |                |  |                         |  |  |  |                           |  |
|--|--|---|--|---|--|---|--|--------------------------------------|--|---|--|---------------------------------|--|-------|--|----------------|--|-------------------------|--|--|--|---------------------------|--|
| Client: <b>Sanborn Head &amp; Associates</b>   |  |   |  | <b>Matrix</b>                           |  |   |  | <b>Analyses Requested</b>            |  |   |  |                                 |  |       |  |                |  | <b>For Lab Use Only</b> |  |  |  |                           |  |
| Project Name/#: N. Monmouth PFAS 5197.01   |  | Site ID #:  |  | <input type="checkbox"/> Tissue         |  | <input type="checkbox"/> Ground           |  | <input type="checkbox"/> Surface     |  | <b>Preservation and Filtration Codes</b>            |  |                                 |  |       |  |                |  |                         |  | SF #: _____  |  |                           |  |
| Project Manager: Andrew Buchy  |  | P.O. #: 5197.01   |  | <input type="checkbox"/> Potable        |  | <input checked="" type="checkbox"/> NPDES |  | <input type="checkbox"/> Field Blank |  |   |  |                                 |  |       |  |                |  |                         |  | SCR #: _____   |  |                           |  |
| Sampler: Don Kelsey  |  | PWSID #:  |  | <input type="checkbox"/> Sediment       |  | <input type="checkbox"/> Water            |  | <input type="checkbox"/> Other:      |  |   |  |                                 |  |       |  |                |  |                         |  | <b>Preservation Codes</b><br>H = HCl      T = Thiosulfate<br>N = HNO <sub>3</sub> B = NaOH<br>S = H <sub>2</sub> SO <sub>4</sub> P = H <sub>3</sub> PO <sub>4</sub><br>F = Field Filtered      O = Other |  |                           |  |
| Phone #: 603-229-1900  |  | Quote #:  |  | <input type="checkbox"/> Soil           |  | <input type="checkbox"/> Composite        |  | <b>Total # of Containers</b>         |  |   |  |                                 |  |       |  |                |  |                         |  | <b>Remarks</b>   |  |                           |  |
| State where samples were collected: ME   |  | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>          |  | Date                                    |  | Time                                      |  | Grab                                 |  | PFAS 537 Mod with isotope dilution<br>(6 compounds) |  |                                 |  |       |  |                |  |                         |  |  |  | Report to RL (no J-flags) |  |
| Sample Identification  |  | 46-63-PRE-20230112  |  | 11/23                                   |  | 15:10                                     |  | X                                    |  | 2   |  |                                 |  |       |  |                |  |                         |  |  |  |                           |  |
|  |  | 46-63-MID-20230112  |  | ↓                                       |  | 15:15                                     |  | ↓                                    |  | ↓   |  |                                 |  |       |  |                |  |                         |  |  |  |                           |  |
|  |  | 46-63-POST-20230112   |  | ↓                                       |  | 15:20                                     |  | ↓                                    |  | ↓   |  |                                 |  |       |  |                |  |                         |  |  |  |                           |  |
| Turnaround Time Requested (TAT) (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |  |   |  | Relinquished by: <i>[Signature]</i>     |  |   |  | Date: 11/23                          |  | Time: 16:00   |  | Received by:                    |  |       |  | Date:          |  | Time:                   |  |  |  |                           |  |
| (Rush TAT is subject to laboratory approval and surcharges)  |  |   |  | Date results are needed:                |  |   |  | Relinquished by:                     |  |   |  | Date:                           |  | Time: |  | Received by:   |  |                         |  |  |  |                           |  |
| Rush results requested by (please check): E-Mail <input checked="" type="checkbox"/> Phone <input type="checkbox"/>        |  |   |  | Relinquished by:                        |  |   |  | Date:                                |  | Time:   |  | Received by:                    |  |       |  | Date:          |  | Time:                   |  |  |  |                           |  |
| E-mail Address: <i>ABUCHY@SANBORNHEAD.COM</i>  |  |   |  | Relinquished by:                        |  |   |  | Date:                                |  | Time:   |  | Received by:                    |  |       |  | Date:          |  | Time:                   |  |  |  |                           |  |
| Phone:   |  |   |  | Relinquished by:                        |  |   |  | Date:                                |  | Time:   |  | Received by:                    |  |       |  | Date:          |  | Time:                   |  |  |  |                           |  |
| <b>Data Package Options</b> (please check if required)   |  |   |  | Relinquished by:                        |  |   |  | Date:                                |  | Time:   |  | Received by:                    |  |       |  | Date:          |  | Time:                   |  |  |  |                           |  |
| Level I <input type="checkbox"/>   |  | MA MCP <input type="checkbox"/>   |  | Relinquished by:                        |  |   |  | Date:                                |  | Time:   |  | Received by: <i>[Signature]</i> |  |       |  | Date: 11/13/23 |  | Time: 0950              |  |  |  |                           |  |
| Level II <input checked="" type="checkbox"/>   |  | CT RCP <input type="checkbox"/>   |  | Relinquished by:                        |  |   |  | Date:                                |  | Time:   |  | Received by:                    |  |       |  | Date:          |  | Time:                   |  |  |  |                           |  |
| Level VI <input type="checkbox"/>  |  | TX TRRP-13 <input type="checkbox"/>   |  | Relinquished by Commercial Carrier:     |  |   |  | Date:                                |  | Time:   |  | Received by:                    |  |       |  | Date:          |  | Time:                   |  |  |  |                           |  |
| NJ DKQP <input type="checkbox"/>   |  | NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B          |  | Temperature upon receipt: <u>2.7</u> °C |  |   |  | Date:                                |  | Time:   |  | Received by:                    |  |       |  | Date:          |  | Time:                   |  |  |  |                           |  |
| EQulS 4-file format/SHA  |  | EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |  | If yes, format: Standard (flat file)    |  |   |  | Date:                                |  | Time:   |  | Received by:                    |  |       |  | Date:          |  | Time:                   |  |  |  |                           |  |
| UPS _____ FedEx _____ Other _____  |  |   |  | Date:                                   |  |   |  | Time:                                |  | Received by:  |  |                                 |  | Date: |  | Time:          |  |                         |  |  |  |                           |  |

*MB*

## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-112199-1

**Login Number: 112199**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: Ballard, Megan**

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |





 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 2/10/2023 9:14:18 AM

**JOB DESCRIPTION**

N Monmouth PFAS/5197.01

**JOB NUMBER**

410-112874-1

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
2/10/2023 9:14:18 AM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 9  |
| QC Sample Results . . . . .        | 10 |
| QC Association Summary . . . . .   | 12 |
| Lab Chronicle . . . . .            | 13 |
| Certification Summary . . . . .    | 14 |
| Method Summary . . . . .           | 15 |
| Sample Summary . . . . .           | 16 |
| Chain of Custody . . . . .         | 17 |
| Receipt Checklists . . . . .       | 18 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112874-1

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| ▫              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112874-1

---

**Job ID: 410-112874-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative  
410-112874-1**

**Receipt**

The sample was received on 1/20/2023 9:30 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.4°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112874-1

**Client Sample ID: 46-63\_SINK\_20230119**

**Lab Sample ID: 410-112874-1**

No Detections.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112874-1

**Client Sample ID: 46-63\_SINK\_20230119**

**Lab Sample ID: 410-112874-1**

Date Collected: 01/19/23 15:00

Matrix: Water

Date Received: 01/20/23 09:30

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.6   |           | 1.6 |     | ng/L |   | 02/02/23 07:14 | 02/10/23 04:52 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.6   |           | 1.6 |     | ng/L |   | 02/02/23 07:14 | 02/10/23 04:52 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.6   |           | 1.6 |     | ng/L |   | 02/02/23 07:14 | 02/10/23 04:52 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.6   |           | 1.6 |     | ng/L |   | 02/02/23 07:14 | 02/10/23 04:52 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.6   |           | 1.6 |     | ng/L |   | 02/02/23 07:14 | 02/10/23 04:52 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.6   |           | 1.6 |     | ng/L |   | 02/02/23 07:14 | 02/10/23 04:52 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 121       |           | 31 - 182 | 02/02/23 07:14 | 02/10/23 04:52 | 1       |
| 13C8 PFOA        | 118       |           | 48 - 162 | 02/02/23 07:14 | 02/10/23 04:52 | 1       |
| 13C9 PFNA        | 121       |           | 51 - 167 | 02/02/23 07:14 | 02/10/23 04:52 | 1       |
| 13C3 PFHxS       | 119       |           | 28 - 188 | 02/02/23 07:14 | 02/10/23 04:52 | 1       |
| 13C8 PFOS        | 123       |           | 51 - 159 | 02/02/23 07:14 | 02/10/23 04:52 | 1       |
| 13C6 PFDA        | 113       |           | 49 - 163 | 02/02/23 07:14 | 02/10/23 04:52 | 1       |



# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112874-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID       | Client Sample ID       | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|---------------------|------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                     |                        | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-112874-1        | 46-63_SINK_20230119    | 121   | 118                | 121                | 119                | 123                | 113                |
| LCS 410-340828/3-A  | Lab Control Sample     | 109   | 106                | 113                | 108                | 118                | 113                |
| LCSD 410-340828/4-A | Lab Control Sample Dup | 115   | 114                | 123                | 115                | 125                | 114                |
| MB 410-340828/1-A   | Method Blank           | 109   | 101                | 114                | 107                | 116                | 107                |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112874-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-340828/1-A**  
**Matrix: Water**  
**Analysis Batch: 342963**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 340828**

| Analyte                              | MB     | MB        | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |     |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | <2.0   |           | 2.0 |     | ng/L |   | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0   |           | 2.0 |     | ng/L |   | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0   |           | 2.0 |     | ng/L |   | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0   |           | 2.0 |     | ng/L |   | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0   |           | 2.0 |     | ng/L |   | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0   |           | 2.0 |     | ng/L |   | 02/02/23 07:14 | 02/10/23 03:46 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 109       |           | 31 - 182 | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| 13C8 PFOA        | 101       |           | 48 - 162 | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| 13C9 PFNA        | 114       |           | 51 - 167 | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| 13C3 PFHxS       | 107       |           | 28 - 188 | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| 13C8 PFOS        | 116       |           | 51 - 159 | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| 13C6 PFDA        | 107       |           | 49 - 163 | 02/02/23 07:14 | 02/10/23 03:46 | 1       |

**Lab Sample ID: LCS 410-340828/3-A**  
**Matrix: Water**  
**Analysis Batch: 342963**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 340828**

| Analyte                              | Spike Added | LCS    | LCS       | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|
|                                      |             | Result | Qualifier |      |   |      |             |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 22.4   |           | ng/L |   | 88   | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 20.9   |           | ng/L |   | 82   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 24.3   |           | ng/L |   | 95   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.9   |           | ng/L |   | 85   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 21.1   |           | ng/L |   | 89   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 21.7   |           | ng/L |   | 85   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 109       |           | 31 - 182 |
| 13C8 PFOA        | 106       |           | 48 - 162 |
| 13C9 PFNA        | 113       |           | 51 - 167 |
| 13C3 PFHxS       | 108       |           | 28 - 188 |
| 13C8 PFOS        | 118       |           | 51 - 159 |
| 13C6 PFDA        | 113       |           | 49 - 163 |

**Lab Sample ID: LCSD 410-340828/4-A**  
**Matrix: Water**  
**Analysis Batch: 342963**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 340828**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD   |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-------|
|                                      |             |             |                |      |   |      |             |     | Limit |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 22.9        |                | ng/L |   | 89   | 59 - 145    | 2   | 30    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 21.0        |                | ng/L |   | 82   | 51 - 145    | 1   | 30    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 23.3        |                | ng/L |   | 91   | 61 - 139    | 4   | 30    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.9        |                | ng/L |   | 85   | 58 - 134    | 0   | 30    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 21.4        |                | ng/L |   | 90   | 45 - 150    | 1   | 30    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 22.6        |                | ng/L |   | 88   | 56 - 138    | 4   | 30    |

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112874-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 115              |                  | 31 - 182      |
| 13C8 PFOA               | 114              |                  | 48 - 162      |
| 13C9 PFNA               | 123              |                  | 51 - 167      |
| 13C3 PFHxS              | 115              |                  | 28 - 188      |
| 13C8 PFOS               | 125              |                  | 51 - 159      |
| 13C6 PFDA               | 114              |                  | 49 - 163      |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112874-1

## LCMS

### Prep Batch: 340828

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-112874-1        | 46-63_SINK_20230119    | Total/NA  | Water  | 537 IDA |            |
| MB 410-340828/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-340828/3-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-340828/4-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 342963

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-112874-1        | 46-63_SINK_20230119    | Total/NA  | Water  | 537 IDA | 340828     |
| MB 410-340828/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 340828     |
| LCS 410-340828/3-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 340828     |
| LCSD 410-340828/4-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 340828     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112874-1

**Client Sample ID: 46-63\_SINK\_20230119**

**Lab Sample ID: 410-112874-1**

**Date Collected: 01/19/23 15:00**

**Matrix: Water**

**Date Received: 01/20/23 09:30**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 340828       | RC3V    | ELLE | 02/02/23 07:14       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 342963       | PY4D    | ELLE | 02/10/23 04:52       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112874-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112874-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112874-1

---

| Lab Sample ID | Client Sample ID    | Matrix | Collected      | Received       |
|---------------|---------------------|--------|----------------|----------------|
| 410-112874-1  | 46-63_SINK_20230119 | Water  | 01/19/23 15:00 | 01/20/23 09:30 |

1

2

3

4

5

6

7

8

9

10

11

12


13

14

15



Chain of Custody Record

|   |  |  |  |                     |  |  |   |                                 |  |                            |
|---|--|--|--|---------------------|--|--|---|---------------------------------|--|----------------------------|
| <b>Client Information</b><br>Client Contact: Shana Whitney<br>Company: Sanborn Head & Associates Inc<br>Address: 20 Foundry Street<br>City: Concord<br>State, Zip: NH, 03301<br>Phone: _____<br>Email: SWhitney@sanbornhead.com<br>Project Name: N Monmouth PFAS/5197.01<br>Site: _____ |  |  | Sampler: <u>Dou Kelley</u><br>Phone: <u>603.312.4876</u>   |                     | Lab PM: Bauer, Kelly<br>E-Mail: Kelly.Bauer@et.eurofinsus.com  |  | Carrier Tracking No(s): _____<br>State of Origin: <u>ME</u> |                                 | COC No: 410-72219-16397.1<br>Page: Page 1 of 4<br>Job #: _____ |                            |
| Due Date Requested: _____<br>TAT Requested (days): <u>5 D</u><br>Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No<br>PO #: 5197.01<br>WO #: _____<br>Project #: 41010916<br>SSOW#: _____  |  |  | Analysis Requested<br>  |                     | Preservation Codes:<br>A - HCL<br>B - NaOH<br>C - Zn Acetate<br>D - Nitric Acid<br>E - NaHSO4<br>F - MeOH<br>G - Amchlor<br>H - Ascorbic Acid<br>I - Ice<br>J - DI Water<br>K - EDTA<br>L - EDA<br>M - Hexane<br>N - None<br>O - AsNaO2<br>P - Na2O4S<br>Q - Na2SO3<br>R - Na2S2O3<br>S - H2SO4<br>T - TSP Dodecahydrate<br>U - Acetone<br>V - MCAA<br>W - pH 4-5<br>Y - Trizma<br>Z - other (specify) |  | Other: _____  |                                 | Special Instructions/Note: _____                               |                            |
| <b>Sample Identification</b>  |  |  | Sample Date  | Sample Time         | Sample Type (C=comp, G=grab)   | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No)                           | Perform MS/MSD (Yes or No)      | PFC_IDA - UCMR3 6 PFAS   | Total Number of containers |
| 46-63-Sink 20230119   |  |  | 1/19/23  | 5:00                | G  | Water  |   | ✓                               |  | 4 @ Dup (QC)               |
| Possible Hazard Identification<br><input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological                                |  |  | Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)<br><input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months |                     |  |  |   |                                 |  |                            |
| Deliverable Requested: I, II, III, IV, Other (specify) <u>Equis</u>   |  |  | Special Instructions/QC Requirements: _____  |                     |  |  |   |                                 |  |                            |
| Empty Kit Relinquished by: _____  |  |  | Date: _____  | Time: _____         | Method of Shipment: _____  |  |   |                                 |  |                            |
| Relinquished by: <u>[Signature]</u>   |  |  | Date/Time: <u>1/19/23 15:45</u>  | Company: <u>SHA</u> | Received by: _____   |  |   | Date/Time: _____                | Company: _____   |                            |
| Relinquished by: _____  |  |  | Date/Time: _____   | Company: _____      | Received by: _____   |  |   | Date/Time: _____                | Company: _____   |                            |
| Relinquished by: _____  |  |  | Date/Time: _____   | Company: _____      | Received by: <u>[Signature]</u>  |  |   | Date/Time: <u>1/20/23 09:30</u> | Company: <u>[Signature]</u>                                    |                            |
| Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No  |  |  | Custody Seal No.: _____  |                     | Cooler Temperature(s) °C and Other Remarks: <u>1.4</u>   |  |   |                                 |  |                            |

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15

SM

## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-112874-1

Login Number: 112874

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: McCaskey, Jonathan

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | N/A    |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-98358-1

Client Project/Site: N Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



Authorized for release by:  
10/5/2022 2:58:12 AM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer". The signature is written in a cursive, flowing style.

---

Kelly Bauer  
Project Manager  
10/5/2022 2:58:12 AM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 9  |
| QC Sample Results . . . . .        | 10 |
| QC Association Summary . . . . .   | 12 |
| Lab Chronicle . . . . .            | 13 |
| Certification Summary . . . . .    | 14 |
| Method Summary . . . . .           | 15 |
| Sample Summary . . . . .           | 16 |
| Chain of Custody . . . . .         | 17 |
| Receipt Checklists . . . . .       | 18 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98358-1

### Qualifiers

#### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98358-1

---

**Job ID: 410-98358-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative**  
**410-98358-1**

**Receipt**

The samples were received on 9/17/2022 10:24 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.1°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98358-1

## Client Sample ID: 52-1\_POET\_Pre\_20220915

Lab Sample ID: 410-98358-1

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 7.1    |           | 1.6 | 0.41 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 42     |           | 1.6 | 0.41 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 5.5    |           | 1.6 | 0.41 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 29     |           | 1.6 | 0.81 | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-1\_POET\_Mid\_20220915

Lab Sample ID: 410-98358-2

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 2.1    |           | 1.6 | 0.81 | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-1\_POET\_Post\_20220915

Lab Sample ID: 410-98358-3

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 0.95   | J         | 1.7 | 0.87 | ng/L | 1       |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC



# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98358-1

**Client Sample ID: 52-1\_POET\_Pre\_20220915**

**Lab Sample ID: 410-98358-1**

Date Collected: 09/15/22 13:57

Matrix: Water

Date Received: 09/17/22 10:24

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 7.1    |           | 1.6 | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:35 | 1       |
| Perfluorooctanoic acid (PFOA)        | 42     |           | 1.6 | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:35 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 1.6 | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:35 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 5.5    |           | 1.6 | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:35 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 29     |           | 1.6 | 0.81 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:35 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.6 | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:35 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 111       |           | 31 - 182 | 09/27/22 11:37 | 10/01/22 06:35 | 1       |
| 13C8 PFOA        | 105       |           | 48 - 162 | 09/27/22 11:37 | 10/01/22 06:35 | 1       |
| 13C9 PFNA        | 124       |           | 51 - 167 | 09/27/22 11:37 | 10/01/22 06:35 | 1       |
| 13C3 PFHxS       | 110       |           | 28 - 188 | 09/27/22 11:37 | 10/01/22 06:35 | 1       |
| 13C8 PFOS        | 115       |           | 51 - 159 | 09/27/22 11:37 | 10/01/22 06:35 | 1       |
| 13C6 PFDA        | 100       |           | 49 - 163 | 09/27/22 11:37 | 10/01/22 06:35 | 1       |

**Client Sample ID: 52-1\_POET\_Mid\_20220915**

**Lab Sample ID: 410-98358-2**

Date Collected: 09/15/22 14:00

Matrix: Water

Date Received: 09/17/22 10:24

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 1.6 | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:46 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 1.6 | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:46 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 1.6 | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:46 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 1.6 | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:46 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 2.1    |           | 1.6 | 0.81 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:46 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.6 | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:46 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 98        |           | 31 - 182 | 09/27/22 11:37 | 10/01/22 06:46 | 1       |
| 13C8 PFOA        | 96        |           | 48 - 162 | 09/27/22 11:37 | 10/01/22 06:46 | 1       |
| 13C9 PFNA        | 109       |           | 51 - 167 | 09/27/22 11:37 | 10/01/22 06:46 | 1       |
| 13C3 PFHxS       | 92        |           | 28 - 188 | 09/27/22 11:37 | 10/01/22 06:46 | 1       |
| 13C8 PFOS        | 98        |           | 51 - 159 | 09/27/22 11:37 | 10/01/22 06:46 | 1       |
| 13C6 PFDA        | 87        |           | 49 - 163 | 09/27/22 11:37 | 10/01/22 06:46 | 1       |

**Client Sample ID: 52-1\_POET\_Post\_20220915**

**Lab Sample ID: 410-98358-3**

Date Collected: 09/15/22 14:03

Matrix: Water

Date Received: 09/17/22 10:24

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 1.7 | 0.43 | ng/L |   | 09/27/22 11:37 | 10/01/22 07:08 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 1.7 | 0.43 | ng/L |   | 09/27/22 11:37 | 10/01/22 07:08 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 1.7 | 0.43 | ng/L |   | 09/27/22 11:37 | 10/01/22 07:08 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 1.7 | 0.43 | ng/L |   | 09/27/22 11:37 | 10/01/22 07:08 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 0.95   | J         | 1.7 | 0.87 | ng/L |   | 09/27/22 11:37 | 10/01/22 07:08 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.7 | 0.43 | ng/L |   | 09/27/22 11:37 | 10/01/22 07:08 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 98        |           | 31 - 182 | 09/27/22 11:37 | 10/01/22 07:08 | 1       |
| 13C8 PFOA        | 94        |           | 48 - 162 | 09/27/22 11:37 | 10/01/22 07:08 | 1       |
| 13C9 PFNA        | 108       |           | 51 - 167 | 09/27/22 11:37 | 10/01/22 07:08 | 1       |

Euofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98358-1

Client Sample ID: 52-1\_POET\_Post\_20220915

Lab Sample ID: 410-98358-3

Date Collected: 09/15/22 14:03

Matrix: Water

Date Received: 09/17/22 10:24

## Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C3 PFHxS              | 97               |                  | 28 - 188      | 09/27/22 11:37  | 10/01/22 07:08  | 1              |
| 13C8 PFOS               | 103              |                  | 51 - 159      | 09/27/22 11:37  | 10/01/22 07:08  | 1              |
| 13C6 PFDA               | 94               |                  | 49 - 163      | 09/27/22 11:37  | 10/01/22 07:08  | 1              |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98358-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID        | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|-------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                         | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-98358-1        | 52-1_POET_Pre_20220915  | 111   | 105                | 124                | 110                | 115                | 100                |
| 410-98358-2        | 52-1_POET_Mid_20220915  | 98  | 96                 | 109                | 92                 | 98                 | 87                 |
| 410-98358-3        | 52-1_POET_Post_20220915 | 98  | 94                 | 108                | 97                 | 103                | 94                 |
| LCS 410-300284/2-A | Lab Control Sample      | 99  | 97                 | 115                | 95                 | 115                | 99                 |
| LCS 410-300284/3-A | Lab Control Sample Dup  | 101   | 101                | 109                | 104                | 113                | 105                |
| MB 410-300284/1-A  | Method Blank            | 99  | 97                 | 113                | 100                | 107                | 100                |

### Surrogate Legend

C4PFHA = 13C4 PFHpA  
 C8PFOA = 13C8 PFOA  
 C9PFNA = 13C9 PFNA  
 C3PFHS = 13C3 PFHxS  
 C8PFOS = 13C8 PFOS  
 C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98358-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-300284/1-A**  
**Matrix: Water**  
**Analysis Batch: 301853**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 300284**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 1.0  | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 99        |           | 31 - 182 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C8 PFOA        | 97        |           | 48 - 162 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C9 PFNA        | 113       |           | 51 - 167 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C3 PFHxS       | 100       |           | 28 - 188 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C8 PFOS        | 107       |           | 51 - 159 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C6 PFDA        | 100       |           | 49 - 163 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |

**Lab Sample ID: LCS 410-300284/2-A**  
**Matrix: Water**  
**Analysis Batch: 301853**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 300284**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 22.0       |               | ng/L |   | 86   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 21.4       |               | ng/L |   | 83   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 20.1       |               | ng/L |   | 86   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 19.7       |               | ng/L |   | 83   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 22.7       |               | ng/L |   | 89   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 99        |           | 31 - 182 |
| 13C8 PFOA        | 97        |           | 48 - 162 |
| 13C9 PFNA        | 115       |           | 51 - 167 |
| 13C3 PFHxS       | 95        |           | 28 - 188 |
| 13C8 PFOS        | 115       |           | 51 - 159 |
| 13C6 PFDA        | 99        |           | 49 - 163 |

**Lab Sample ID: LCSD 410-300284/3-A**  
**Matrix: Water**  
**Analysis Batch: 301853**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 300284**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-----------|
|                                      |             |             |                |      |   |      |             |     |           |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 22.5        |                | ng/L |   | 88   | 51 - 145    | 2   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 21.6        |                | ng/L |   | 85   | 61 - 139    | 1   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.8        |                | ng/L |   | 85   | 58 - 134    | 2   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 20.0        |                | ng/L |   | 84   | 45 - 150    | 2   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 23.0        |                | ng/L |   | 90   | 56 - 138    | 1   | 30        |

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98358-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD LCSD</i> |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 101              |                  | 31 - 182      |
| 13C8 PFOA               | 101              |                  | 48 - 162      |
| 13C9 PFNA               | 109              |                  | 51 - 167      |
| 13C3 PFHxS              | 104              |                  | 28 - 188      |
| 13C8 PFOS               | 113              |                  | 51 - 159      |
| 13C6 PFDA               | 105              |                  | 49 - 163      |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98358-1

## LCMS

### Prep Batch: 300284

| Lab Sample ID       | Client Sample ID        | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|-------------------------|-----------|--------|---------|------------|
| 410-98358-1         | 52-1_POET_Pre_20220915  | Total/NA  | Water  | 537 IDA |            |
| 410-98358-2         | 52-1_POET_Mid_20220915  | Total/NA  | Water  | 537 IDA |            |
| 410-98358-3         | 52-1_POET_Post_20220915 | Total/NA  | Water  | 537 IDA |            |
| MB 410-300284/1-A   | Method Blank            | Total/NA  | Water  | 537 IDA |            |
| LCS 410-300284/2-A  | Lab Control Sample      | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-300284/3-A | Lab Control Sample Dup  | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 301853

| Lab Sample ID       | Client Sample ID        | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|-------------------------|-----------|--------|---------|------------|
| 410-98358-1         | 52-1_POET_Pre_20220915  | Total/NA  | Water  | 537 IDA | 300284     |
| 410-98358-2         | 52-1_POET_Mid_20220915  | Total/NA  | Water  | 537 IDA | 300284     |
| 410-98358-3         | 52-1_POET_Post_20220915 | Total/NA  | Water  | 537 IDA | 300284     |
| MB 410-300284/1-A   | Method Blank            | Total/NA  | Water  | 537 IDA | 300284     |
| LCS 410-300284/2-A  | Lab Control Sample      | Total/NA  | Water  | 537 IDA | 300284     |
| LCSD 410-300284/3-A | Lab Control Sample Dup  | Total/NA  | Water  | 537 IDA | 300284     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98358-1

**Client Sample ID: 52-1\_POET\_Pre\_20220915**

**Lab Sample ID: 410-98358-1**

Date Collected: 09/15/22 13:57

Matrix: Water

Date Received: 09/17/22 10:24

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 300284       | D5VP          | ELLE | 09/27/22 11:37       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 301853       | QD9Y          | ELLE | 10/01/22 06:35       |

**Client Sample ID: 52-1\_POET\_Mid\_20220915**

**Lab Sample ID: 410-98358-2**

Date Collected: 09/15/22 14:00

Matrix: Water

Date Received: 09/17/22 10:24

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 300284       | D5VP          | ELLE | 09/27/22 11:37       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 301853       | QD9Y          | ELLE | 10/01/22 06:46       |

**Client Sample ID: 52-1\_POET\_Post\_20220915**

**Lab Sample ID: 410-98358-3**

Date Collected: 09/15/22 14:03

Matrix: Water

Date Received: 09/17/22 10:24

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 300284       | D5VP          | ELLE | 09/27/22 11:37       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 301853       | QD9Y          | ELLE | 10/01/22 07:08       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98358-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |



# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98358-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98358-1

---

| Lab Sample ID | Client Sample ID        | Matrix | Collected      | Received       |
|---------------|-------------------------|--------|----------------|----------------|
| 410-98358-1   | 52-1_POET_Pre_20220915  | Water  | 09/15/22 13:57 | 09/17/22 10:24 |
| 410-98358-2   | 52-1_POET_Mid_20220915  | Water  | 09/15/22 14:00 | 09/17/22 10:24 |
| 410-98358-3   | 52-1_POET_Post_20220915 | Water  | 09/15/22 14:03 | 09/17/22 10:24 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



Lancaster Laboratories Environmental

410-98358 Chain of Custody

Acct. #

|   |                                     |  |  |                                      |   |                                      |  |              |           |                          |                                    |                           |                                    |                 |  |
|---|-------------------------------------|--|--|--------------------------------------|---|--------------------------------------|--|--------------|-----------|--------------------------|------------------------------------|---------------------------|------------------------------------|-----------------|--|
| Client: <b>Sanborn Head &amp; Associates</b>  |                                     |  |  | <b>Matrix</b>                        |   |                                      | <b>Analyses Requested</b>                        |              |           |                          |                                    | <b>For Lab Use Only</b>   |                                    |                 |  |
| Project Name#: N. Monmouth PFAS 5197.01   |                                     | Site ID #:   |  | <input type="checkbox"/> Tissue      | <input type="checkbox"/> Ground           | <input type="checkbox"/> Surface     | <b>Preservation and Filtration Codes</b>         |              |           |                          |                                    | SF #: _____               |                                    |                 |  |
| Project Manager: Andrew Buchy   |                                     | P.O. #: 5197.01  |  | <input type="checkbox"/> Potable     | <input checked="" type="checkbox"/> NPDES | <input type="checkbox"/> Field Blank |  |              |           |                          |                                    | SCR #: _____              |                                    |                 |  |
| Sampler: Don Kelsey   |                                     | PWSID #:   |  | <input type="checkbox"/> Sediment    |   |                                      | PFAS 537 Mod with isotope dilution (6 compounds) |              |           |                          |                                    | <b>Preservation Codes</b> |                                    |                 |  |
| Phone #: 603-229-1900   |                                     | Quote #:   |  | <input type="checkbox"/> Soil        | <input type="checkbox"/> Water            | <input type="checkbox"/> Other:      |  |              |           |                          |                                    | H = HCl                   |                                    | T = Thiosulfate |  |
| State where samples were collected: ME  |                                     | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/> |  |                                      |   |                                      | N = HNO <sub>3</sub>                             |              | B = NaOH  |                          | S = H <sub>2</sub> SO <sub>4</sub> |                           | P = H <sub>3</sub> PO <sub>4</sub> |                 |  |
|   |                                     |  |  |                                      |   |                                      | F = Field Filtered                               |              | O = Other |                          |                                    |                           |                                    |                 |  |
| <b>Sample Identification</b>  |                                     | <b>Collection</b>  |  | <input type="checkbox"/> Composite   |   |                                      | <b>Total # of Containers</b>                     |              |           |                          |                                    |                           | <b>Remarks</b>                     |                 |  |
|   | Date                                | Time   | Grab   |                                      |   |                                      |  |              |           |                          |                                    |                           |                                    |                 |  |
| 52-1_POET_Pre_202209 15   | 9/15/22                             | 13:57  | X  |                                      | X   |                                      | 2  | X            |           |                          |                                    |                           |                                    |                 |  |
| 52-1_POET_Mid_202209 15   | ↓                                   | 14:00  | X  |                                      | X   |                                      | 2  | X            |           |                          |                                    |                           |                                    |                 |  |
| 52-1_POET_Post_202209 15  | ↓                                   | 14:03  | X  |                                      | X   |                                      | 2  | X            |           |                          |                                    |                           |                                    |                 |  |
| <b>Turnaround Time Requested (TAT)</b> (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |                                     |  |  | Relinquished by: <i>[Signature]</i>  |   | Date                                 | Time   | Received by: |           | Date                     | Time                               |                           |                                    |                 |  |
| (Rush TAT is subject to laboratory approval and surcharges.)  |                                     |  |  |                                      |   | 9/15/22                              | 13:57  |              |           |                          |                                    |                           |                                    |                 |  |
| Date results are needed:  |                                     |  |  | Relinquished by:                     |   | Date                                 | Time   | Received by: |           | Date                     | Time                               |                           |                                    |                 |  |
| Rush results requested by (please check): E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>                          |                                     |  |  |                                      |   |                                      |  |              |           |                          |                                    |                           |                                    |                 |  |
| E-mail Address:   |                                     |  |  | Relinquished by:                     |   | Date                                 | Time   | Received by: |           | Date                     | Time                               |                           |                                    |                 |  |
| Phone:  |                                     |  |  |                                      |   |                                      |  |              |           |                          |                                    |                           |                                    |                 |  |
| <b>Data Package Options</b> (please check if required)  |                                     |  |  | Relinquished by:                     |   | Date                                 | Time   | Received by: |           | Date                     | Time                               |                           |                                    |                 |  |
| Level I   | <input type="checkbox"/>            | MA MCP   | <input type="checkbox"/>                                 |                                      |   |                                      |  |              |           |                          |                                    |                           |                                    |                 |  |
| Level II  | <input checked="" type="checkbox"/> | CT RCP   | <input type="checkbox"/>                                 |                                      |   |                                      |  |              |           |                          |                                    |                           |                                    |                 |  |
| Level VI  | <input type="checkbox"/>            | TX TRRP-13   | <input type="checkbox"/>                                 |                                      |   |                                      |  |              |           |                          |                                    |                           |                                    |                 |  |
| NJ DKQP   | <input type="checkbox"/>            | NYSDEC Category  | <input type="checkbox"/> A or <input type="checkbox"/> B |                                      |   |                                      |  |              |           |                          |                                    |                           |                                    |                 |  |
| EQUS 4-file format/SHA  |                                     |  |  | Relinquished by Commercial Carrier:  |   |                                      |  |              |           |                          |                                    |                           |                                    |                 |  |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |                                     |  |  | If yes, format: Standard (flat file) |   |                                      |  |              |           | Temperature upon receipt |                                    | 4.1 °C                    |                                    |                 |  |
| UPS _____ FedEx <input checked="" type="checkbox"/> Other _____   |                                     |  |  |                                      |   |                                      |  |              |           |                          |                                    |                           |                                    |                 |  |



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-98358-1

**Login Number: 98358**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: McBeth, Jessica**

| Question   | Answer | Comment      |
|--|--------|--------------|
| The cooler's custody seal is intact.   | True   |              |
| The cooler or samples do not appear to have been compromised or tampered with.             | True   |              |
| Samples were received on ice.  | True   |              |
| Cooler Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen).        | True   |              |
| Cooler Temperature is recorded.  | True   |              |
| WV: Container Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen). | N/A    |              |
| WV: Container Temperature is recorded.   | N/A    |              |
| COC is present.  | True   |              |
| COC is filled out in ink and legible.  | True   |              |
| COC is filled out with all pertinent information.  | True   |              |
| There are no discrepancies between the containers received and the COC.                    | True   |              |
| Sample containers have legible labels.   | True   |              |
| Containers are not broken or leaking.  | True   |              |
| Sample collection date/times are provided.   | True   |              |
| Appropriate sample containers are used.  | True   |              |
| Sample bottles are completely filled.  | True   |              |
| There is sufficient vol. for all requested analyses.                                       | True   |              |
| Is the Field Sampler's name present on COC?  | True   |              |
| Sample custody seals are intact.   | N/A    | Not present. |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?                | N/A    |              |

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 1/8/2023 10:58:32 PM

**JOB DESCRIPTION**

N Monmouth PFAS

**JOB NUMBER**

410-110271-1

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
1/8/2023 10:58:32 PM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 10 |
| QC Sample Results . . . . .        | 11 |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 16 |
| Sample Summary . . . . .           | 17 |
| Chain of Custody . . . . .         | 18 |
| Receipt Checklists . . . . .       | 19 |



## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110271-1

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110271-1

---

**Job ID: 410-110271-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative  
410-110271-1**

**Receipt**

The samples were received on 12/22/2022 11:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.5°C

**Receipt Exceptions**

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110271-1

## Client Sample ID: 52-2\_POET\_Pre\_20221221

Lab Sample ID: 410-110271-1

| Analyte                             | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)     | 1.8    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)       | 11     |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS) | 9.3    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-2\_POET\_Mid\_20221221

Lab Sample ID: 410-110271-2

| Analyte                             | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 2.2    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-2\_POET\_Post\_20221221

Lab Sample ID: 410-110271-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110271-1

**Client Sample ID: 52-2\_POET\_Pre\_20221221**

**Lab Sample ID: 410-110271-1**

Date Collected: 12/21/22 09:36

Matrix: Water

Date Received: 12/22/22 11:00

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 1.8       |           | 1.7      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:19 | 1       |
| Perfluorooctanoic acid (PFOA)        | 11        |           | 1.7      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:19 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:19 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7      |           | 1.7      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:19 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 9.3       |           | 1.7      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:19 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:19 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 128       |           | 31 - 182 |     |      |   | 01/04/23 15:46 | 01/05/23 21:19 | 1       |
| 13C8 PFOA                            | 121       |           | 48 - 162 |     |      |   | 01/04/23 15:46 | 01/05/23 21:19 | 1       |
| 13C9 PFNA                            | 133       |           | 51 - 167 |     |      |   | 01/04/23 15:46 | 01/05/23 21:19 | 1       |
| 13C3 PFHxS                           | 128       |           | 28 - 188 |     |      |   | 01/04/23 15:46 | 01/05/23 21:19 | 1       |
| 13C8 PFOS                            | 128       |           | 51 - 159 |     |      |   | 01/04/23 15:46 | 01/05/23 21:19 | 1       |
| 13C6 PFDA                            | 114       |           | 49 - 163 |     |      |   | 01/04/23 15:46 | 01/05/23 21:19 | 1       |

**Client Sample ID: 52-2\_POET\_Mid\_20221221**

**Lab Sample ID: 410-110271-2**

Date Collected: 12/21/22 09:38

Matrix: Water

Date Received: 12/22/22 11:00

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7      |           | 1.7      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:30 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:30 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:30 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7      |           | 1.7      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:30 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 2.2       |           | 1.7      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:30 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:30 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 111       |           | 31 - 182 |     |      |   | 01/04/23 15:46 | 01/05/23 21:30 | 1       |
| 13C8 PFOA                            | 106       |           | 48 - 162 |     |      |   | 01/04/23 15:46 | 01/05/23 21:30 | 1       |
| 13C9 PFNA                            | 120       |           | 51 - 167 |     |      |   | 01/04/23 15:46 | 01/05/23 21:30 | 1       |
| 13C3 PFHxS                           | 115       |           | 28 - 188 |     |      |   | 01/04/23 15:46 | 01/05/23 21:30 | 1       |
| 13C8 PFOS                            | 114       |           | 51 - 159 |     |      |   | 01/04/23 15:46 | 01/05/23 21:30 | 1       |
| 13C6 PFDA                            | 101       |           | 49 - 163 |     |      |   | 01/04/23 15:46 | 01/05/23 21:30 | 1       |

**Client Sample ID: 52-2\_POET\_Post\_20221221**

**Lab Sample ID: 410-110271-3**

Date Collected: 12/21/22 09:40

Matrix: Water

Date Received: 12/22/22 11:00

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.8      |           | 1.8      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:41 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.8      |           | 1.8      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:41 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.8      |           | 1.8      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:41 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.8      |           | 1.8      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:41 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.8      |           | 1.8      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:41 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.8      |           | 1.8      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:41 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 135       |           | 31 - 182 |     |      |   | 01/04/23 15:46 | 01/05/23 21:41 | 1       |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110271-1

Client Sample ID: 52-2\_POET\_Post\_20221221

Lab Sample ID: 410-110271-3

Date Collected: 12/21/22 09:40

Matrix: Water

Date Received: 12/22/22 11:00

## Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C8 PFOA               | 136              |                  | 48 - 162      | 01/04/23 15:46  | 01/05/23 21:41  | 1              |
| 13C9 PFNA               | 145              |                  | 51 - 167      | 01/04/23 15:46  | 01/05/23 21:41  | 1              |
| 13C3 PFHxS              | 145              |                  | 28 - 188      | 01/04/23 15:46  | 01/05/23 21:41  | 1              |
| 13C8 PFOS               | 138              |                  | 51 - 159      | 01/04/23 15:46  | 01/05/23 21:41  | 1              |
| 13C6 PFDA               | 135              |                  | 49 - 163      | 01/04/23 15:46  | 01/05/23 21:41  | 1              |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110271-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID        | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|-------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                         | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-110271-1       | 52-2_POET_Pre_20221221  | 128   | 121                | 133                | 128                | 128                | 114                |
| 410-110271-2       | 52-2_POET_Mid_20221221  | 111   | 106                | 120                | 115                | 114                | 101                |
| 410-110271-3       | 52-2_POET_Post_20221221 | 135   | 136                | 145                | 145                | 138                | 135                |
| LCS 410-332570/2-A | Lab Control Sample      | 125   | 125                | 131                | 127                | 128                | 122                |
| LCS 410-332570/3-A | Lab Control Sample Dup  | 120   | 121                | 127                | 121                | 122                | 113                |
| MB 410-332570/1-A  | Method Blank            | 113   | 104                | 115                | 109                | 109                | 101                |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110271-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-332570/1-A**  
**Matrix: Water**  
**Analysis Batch: 332827**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 332570**

| Analyte                              | MB     | MB        | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |     |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 18:21 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 113       |           | 31 - 182 | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| 13C8 PFOA        | 104       |           | 48 - 162 | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| 13C9 PFNA        | 115       |           | 51 - 167 | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| 13C3 PFHxS       | 109       |           | 28 - 188 | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| 13C8 PFOS        | 109       |           | 51 - 159 | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| 13C6 PFDA        | 101       |           | 49 - 163 | 01/04/23 15:46 | 01/05/23 18:21 | 1       |

**Lab Sample ID: LCS 410-332570/2-A**  
**Matrix: Water**  
**Analysis Batch: 332827**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 332570**

| Analyte                              | Spike Added | LCS    | LCS       | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|
|                                      |             | Result | Qualifier |      |   |      |             |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 22.5   |           | ng/L |   | 88   | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 20.5   |           | ng/L |   | 80   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 22.3   |           | ng/L |   | 87   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.2   |           | ng/L |   | 82   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 20.2   |           | ng/L |   | 85   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 21.6   |           | ng/L |   | 84   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 125       |           | 31 - 182 |
| 13C8 PFOA        | 125       |           | 48 - 162 |
| 13C9 PFNA        | 131       |           | 51 - 167 |
| 13C3 PFHxS       | 127       |           | 28 - 188 |
| 13C8 PFOS        | 128       |           | 51 - 159 |
| 13C6 PFDA        | 122       |           | 49 - 163 |

**Lab Sample ID: LCSD 410-332570/3-A**  
**Matrix: Water**  
**Analysis Batch: 332827**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 332570**

| Analyte                              | Spike Added | LCSD   | LCSD      | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|-----|-----------|
|                                      |             | Result | Qualifier |      |   |      |             |     |           |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 23.5   |           | ng/L |   | 92   | 59 - 145    | 4   | 30        |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 19.8   |           | ng/L |   | 77   | 51 - 145    | 3   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 22.4   |           | ng/L |   | 87   | 61 - 139    | 0   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.5   |           | ng/L |   | 83   | 58 - 134    | 1   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 19.7   |           | ng/L |   | 83   | 45 - 150    | 2   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 21.3   |           | ng/L |   | 83   | 56 - 138    | 1   | 30        |

Eurofins Lancaster Laboratories Environment Testing, LLC

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110271-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 120              |                  | 31 - 182      |
| 13C8 PFOA               | 121              |                  | 48 - 162      |
| 13C9 PFNA               | 127              |                  | 51 - 167      |
| 13C3 PFHxS              | 121              |                  | 28 - 188      |
| 13C8 PFOS               | 122              |                  | 51 - 159      |
| 13C6 PFDA               | 113              |                  | 49 - 163      |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110271-1

## LCMS

### Prep Batch: 332570

| Lab Sample ID       | Client Sample ID        | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|-------------------------|-----------|--------|---------|------------|
| 410-110271-1        | 52-2_POET_Pre_20221221  | Total/NA  | Water  | 537 IDA |            |
| 410-110271-2        | 52-2_POET_Mid_20221221  | Total/NA  | Water  | 537 IDA |            |
| 410-110271-3        | 52-2_POET_Post_20221221 | Total/NA  | Water  | 537 IDA |            |
| MB 410-332570/1-A   | Method Blank            | Total/NA  | Water  | 537 IDA |            |
| LCS 410-332570/2-A  | Lab Control Sample      | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-332570/3-A | Lab Control Sample Dup  | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 332827

| Lab Sample ID       | Client Sample ID        | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|-------------------------|-----------|--------|---------|------------|
| 410-110271-1        | 52-2_POET_Pre_20221221  | Total/NA  | Water  | 537 IDA | 332570     |
| 410-110271-2        | 52-2_POET_Mid_20221221  | Total/NA  | Water  | 537 IDA | 332570     |
| 410-110271-3        | 52-2_POET_Post_20221221 | Total/NA  | Water  | 537 IDA | 332570     |
| MB 410-332570/1-A   | Method Blank            | Total/NA  | Water  | 537 IDA | 332570     |
| LCS 410-332570/2-A  | Lab Control Sample      | Total/NA  | Water  | 537 IDA | 332570     |
| LCSD 410-332570/3-A | Lab Control Sample Dup  | Total/NA  | Water  | 537 IDA | 332570     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110271-1

**Client Sample ID: 52-2\_POET\_Pre\_20221221**

**Lab Sample ID: 410-110271-1**

Date Collected: 12/21/22 09:36

Matrix: Water

Date Received: 12/22/22 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332570       | QLP7    | ELLE | 01/04/23 15:46       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 332827       | QD9Y    | ELLE | 01/05/23 21:19       |

**Client Sample ID: 52-2\_POET\_Mid\_20221221**

**Lab Sample ID: 410-110271-2**

Date Collected: 12/21/22 09:38

Matrix: Water

Date Received: 12/22/22 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332570       | QLP7    | ELLE | 01/04/23 15:46       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 332827       | QD9Y    | ELLE | 01/05/23 21:30       |

**Client Sample ID: 52-2\_POET\_Post\_20221221**

**Lab Sample ID: 410-110271-3**

Date Collected: 12/21/22 09:40

Matrix: Water

Date Received: 12/22/22 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332570       | QLP7    | ELLE | 01/04/23 15:46       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 332827       | QD9Y    | ELLE | 01/05/23 21:41       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110271-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110271-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110271-1

---

| Lab Sample ID | Client Sample ID        | Matrix | Collected      | Received       |
|---------------|-------------------------|--------|----------------|----------------|
| 410-110271-1  | 52-2_POET_Pre_20221221  | Water  | 12/21/22 09:36 | 12/22/22 11:00 |
| 410-110271-2  | 52-2_POET_Mid_20221221  | Water  | 12/21/22 09:38 | 12/22/22 11:00 |
| 410-110271-3  | 52-2_POET_Post_20221221 | Water  | 12/21/22 09:40 | 12/22/22 11:00 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



410-110271 Chain of Custody

# Environmental Analysis Request/Chain of Custody

Acct. # \_\_\_\_\_ Group # \_\_\_\_\_ Sample # \_\_\_\_\_

|   |                                     |  |  |   |  |   |   |              |      |      |  |  |                                    |                           |                                    |  |
|---|-------------------------------------|--|--|---|--|---|---|--------------|------|------|--|--|------------------------------------|---------------------------|------------------------------------|--|
| Client: <b>Sanborn Head &amp; Associates</b>  |                                     |  |  | <b>Matrix</b>   |  |   | <b>Analyses Requested</b>   |              |      |      |  |  | <b>For Lab Use Only</b>            |                           |                                    |  |
| Project Name/#: N. Monmouth PFAS 5197.01  |                                     | Site ID #:   |  | <input type="checkbox"/> Tissue                               | <input checked="" type="checkbox"/> Ground | <input type="checkbox"/> Surface                                | <b>Preservation and Filtration Codes</b>                                  |              |      |      |  |  | SF #: _____                        |                           |                                    |  |
| Project Manager: Andrew Buchy   |                                     | P.O. #: 5197.01  |  | <input type="checkbox"/> Potable                              | <input type="checkbox"/> NPDES             | <input type="checkbox"/> Field Blank                            |   |              |      |      |  |  | SCR #: _____                       |                           |                                    |  |
| Sampler: Don Kelsey   |                                     | PWSID #:   |  | <input type="checkbox"/> Sediment                             | <input type="checkbox"/> Water             | <input type="checkbox"/> Other:                                 | Total # of Containers<br>PFAS 537 Mod with isotope dilution (6 compounds) |              |      |      |  |  | <b>Preservation Codes</b>          |                           |                                    |  |
| Phone #: 603-229-1900   |                                     | Quote #:   |  | <input type="checkbox"/> Soil                                 |  |   |   |              |      |      |  |  | H = HCl                            |                           | T = Thiosulfate                    |  |
| State where samples were collected: ME  |                                     | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/> |  |   |  |   |   |              |      |      |  |  | N = HNO <sub>3</sub>               |                           | B = NaOH                           |  |
|   |                                     |  |  |   |  |   |   |              |      |      |  |  | S = H <sub>2</sub> SO <sub>4</sub> |                           | P = H <sub>3</sub> PO <sub>4</sub> |  |
|   |                                     |  |  |   |  |   |   |              |      |      |  |  | F = Field Filtered                 |                           | O = Other                          |  |
| <b>Collection</b>   |                                     |  |  | <input type="checkbox"/> Composite                            |  |   |   |              |      |      |  |  | <b>Remarks</b>                     |                           |                                    |  |
| <b>Sample Identification</b>  |                                     |  |  | Date  | Time                                       | Grab  |   |              |      |      |  |  |                                    |                           |                                    |  |
| 52-2_POET_Pre_202212  |                                     |  |  | 12/21/22  | 9:36                                       | X   |   | X            | 2    | X    |  |  |                                    | Report to RL (no J-flags) |                                    |  |
| 52-2_POET_Mid_202212  |                                     |  |  | +   | 9:38                                       | X   |   | X            | 2    | X    |  |  |                                    | Report to RL (no J-flags) |                                    |  |
| 52-2_POET_Post_202212   |                                     |  |  | +   | 9:40                                       | X   |   | X            | 2    | X    |  |  |                                    | Report to RL (no J-flags) |                                    |  |
|   |                                     |  |  |   |  |   |   |              |      |      |  |  |                                    |                           |                                    |  |
|   |                                     |  |  |   |  |   |   |              |      |      |  |  |                                    |                           |                                    |  |
|   |                                     |  |  |   |  |   |   |              |      |      |  |  |                                    |                           |                                    |  |
|   |                                     |  |  |   |  |   |   |              |      |      |  |  |                                    |                           |                                    |  |
|   |                                     |  |  |   |  |   |   |              |      |      |  |  |                                    |                           |                                    |  |
| <b>Turnaround Time Requested (TAT) (please check):</b> Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |                                     |  |  | Relinquished by: <i>[Signature]</i>                           |  | Date  | Time  | Received by: | Date | Time |  |  |                                    |                           |                                    |  |
| (Rush TAT is subject to laboratory approval and surcharges.)  |                                     |  |  |   |  | 12/21/22  | 15:45   |              |      |      |  |  |                                    |                           |                                    |  |
| <b>Date results are needed:</b>   |                                     |  |  | Relinquished by:  |  | Date  | Time  | Received by: | Date | Time |  |  |                                    |                           |                                    |  |
| Rush results requested by (please check): E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>                          |                                     |  |  |   |  |   |   |              |      |      |  |  |                                    |                           |                                    |  |
| E-mail Address:   |                                     |  |  | Relinquished by:  |  | Date  | Time  | Received by: | Date | Time |  |  |                                    |                           |                                    |  |
| Phone:  |                                     |  |  |   |  |   |   |              |      |      |  |  |                                    |                           |                                    |  |
| <b>Data Package Options</b> (please check if required)  |                                     |  |  | Relinquished by:  |  | Date  | Time  | Received by: | Date | Time |  |  |                                    |                           |                                    |  |
| Level I   | <input type="checkbox"/>            | MA MCP   | <input type="checkbox"/>                                 |   |  |   |   |              |      |      |  |  |                                    |                           |                                    |  |
| Level II  | <input checked="" type="checkbox"/> | CT RCP   | <input type="checkbox"/>                                 |   |  |   |   |              |      |      |  |  |                                    |                           |                                    |  |
| Level VI  | <input type="checkbox"/>            | TX TRRP-13   | <input type="checkbox"/>                                 |   |  |   |   |              |      |      |  |  |                                    |                           |                                    |  |
| NJ DKQP   | <input type="checkbox"/>            | NYSDEC Category  | <input type="checkbox"/> A or <input type="checkbox"/> B |   |  |   |   |              |      |      |  |  |                                    |                           |                                    |  |
| EQUS 4-file format/SHA  |                                     |  |  | Relinquished by Commercial Carrier:                           |  |   |   |              |      |      |  | Temperature upon receipt <u>4.5</u> °C |                                    |                           |                                    |  |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |                                     |  |  | If yes, format: <input type="checkbox"/> Standard (flat file) |  | UPS _____ FedEx <input checked="" type="checkbox"/> Other _____ |   |              |      |      |  |  |                                    |                           |                                    |  |

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300

pg 1 of 1

7045 0717

## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-110271-1

Login Number: 110271

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Reiff, Nicole L

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 1/9/2023 9:10:01 PM

**JOB DESCRIPTION**

N Monmouth PFAS

**JOB NUMBER**

410-110021-1



## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
1/9/2023 9:10:01 PM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 10 |
| QC Sample Results . . . . .        | 11 |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 16 |
| Sample Summary . . . . .           | 17 |
| Chain of Custody . . . . .         | 18 |
| Receipt Checklists . . . . .       | 19 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

---

**Job ID: 410-110021-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative  
410-110021-1**

**Receipt**

The samples were received on 12/21/2022 11:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.6°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

## Client Sample ID: 52-3\_POET\_PRE\_20221220

Lab Sample ID: 410-110021-1

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 6.2    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 38     |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 2.8    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 21     |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-3\_POET\_MID\_20221220

Lab Sample ID: 410-110021-2

| Analyte                             | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 2.0    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-3\_POET\_POST\_20221220

Lab Sample ID: 410-110021-3

| Analyte                             | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 21     |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

**Client Sample ID: 52-3\_POET\_PRE\_20221220**

**Lab Sample ID: 410-110021-1**

Date Collected: 12/20/22 10:30

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 6.2       |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| Perfluorooctanoic acid (PFOA)        | 38        |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 2.8       |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 21        |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 109       |           | 31 - 182 |     |      |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| 13C8 PFOA                            | 102       |           | 48 - 162 |     |      |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| 13C9 PFNA                            | 105       |           | 51 - 167 |     |      |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| 13C3 PFHxS                           | 115       |           | 28 - 188 |     |      |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| 13C8 PFOS                            | 112       |           | 51 - 159 |     |      |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |
| 13C6 PFDA                            | 108       |           | 49 - 163 |     |      |   | 01/03/23 17:22 | 01/06/23 23:04 | 1       |

**Client Sample ID: 52-3\_POET\_MID\_20221220**

**Lab Sample ID: 410-110021-2**

Date Collected: 12/20/22 10:32

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 2.0       |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 111       |           | 31 - 182 |     |      |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| 13C8 PFOA                            | 97        |           | 48 - 162 |     |      |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| 13C9 PFNA                            | 119       |           | 51 - 167 |     |      |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| 13C3 PFHxS                           | 106       |           | 28 - 188 |     |      |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| 13C8 PFOS                            | 115       |           | 51 - 159 |     |      |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |
| 13C6 PFDA                            | 100       |           | 49 - 163 |     |      |   | 01/03/23 17:22 | 01/06/23 23:15 | 1       |

**Client Sample ID: 52-3\_POET\_POST\_20221220**

**Lab Sample ID: 410-110021-3**

Date Collected: 12/20/22 10:35

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.6   |           | 1.6 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:26 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.6   |           | 1.6 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:26 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.6   |           | 1.6 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:26 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.6   |           | 1.6 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:26 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 21     |           | 1.6 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:26 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.6   |           | 1.6 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 23:26 | 1       |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

**Client Sample ID: 52-3\_POET\_POST\_20221220**

**Lab Sample ID: 410-110021-3**

**Date Collected: 12/20/22 10:35**

**Matrix: Water**

**Date Received: 12/21/22 11:40**

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C4 PFHpA              | 99               |                  | 31 - 182      | 01/03/23 17:22  | 01/06/23 23:26  | 1              |
| 13C8 PFOA               | 95               |                  | 48 - 162      | 01/03/23 17:22  | 01/06/23 23:26  | 1              |
| 13C9 PFNA               | 108              |                  | 51 - 167      | 01/03/23 17:22  | 01/06/23 23:26  | 1              |
| 13C3 PFHxS              | 98               |                  | 28 - 188      | 01/03/23 17:22  | 01/06/23 23:26  | 1              |
| 13C8 PFOS               | 107              |                  | 51 - 159      | 01/03/23 17:22  | 01/06/23 23:26  | 1              |
| 13C6 PFDA               | 99               |                  | 49 - 163      | 01/03/23 17:22  | 01/06/23 23:26  | 1              |





# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID        | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|-------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                         | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-110021-1       | 52-3_POET_PRE_20221220  | 109   | 102                | 105                | 115                | 112                | 108                |
| 410-110021-2       | 52-3_POET_MID_20221220  | 111   | 97                 | 119                | 106                | 115                | 100                |
| 410-110021-3       | 52-3_POET_POST_20221220 | 99  | 95                 | 108                | 98                 | 107                | 99                 |
| LCS 410-332220/2-A | Lab Control Sample      | 108   | 102                | 112                | 104                | 112                | 95                 |
| LCS 410-332220/3-A | Lab Control Sample Dup  | 101   | 97                 | 107                | 105                | 110                | 99                 |
| MB 410-332220/1-A  | Method Blank            | 110   | 105                | 111                | 115                | 112                | 101                |

### Surrogate Legend

C4PFHA = 13C4 PFHpA  
 C8PFOA = 13C8 PFOA  
 C9PFNA = 13C9 PFNA  
 C3PFHS = 13C3 PFHxS  
 C8PFOS = 13C8 PFOS  
 C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-332220/1-A**  
**Matrix: Water**  
**Analysis Batch: 333356**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 332220**

| Analyte                              | MB     | MB        | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |     |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 110       |           | 31 - 182 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C8 PFOA        | 105       |           | 48 - 162 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C9 PFNA        | 111       |           | 51 - 167 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C3 PFHxS       | 115       |           | 28 - 188 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C8 PFOS        | 112       |           | 51 - 159 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C6 PFDA        | 101       |           | 49 - 163 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |

**Lab Sample ID: LCS 410-332220/2-A**  
**Matrix: Water**  
**Analysis Batch: 333356**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 332220**

| Analyte                              | Spike Added | LCS    | LCS       | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|
|                                      |             | Result | Qualifier |      |   |      |             |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 24.9   |           | ng/L |   | 97   | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 25.7   |           | ng/L |   | 100  | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 28.2   |           | ng/L |   | 110  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 23.0   |           | ng/L |   | 99   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.9   |           | ng/L |   | 101  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 26.4   |           | ng/L |   | 103  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 108       |           | 31 - 182 |
| 13C8 PFOA        | 102       |           | 48 - 162 |
| 13C9 PFNA        | 112       |           | 51 - 167 |
| 13C3 PFHxS       | 104       |           | 28 - 188 |
| 13C8 PFOS        | 112       |           | 51 - 159 |
| 13C6 PFDA        | 95        |           | 49 - 163 |

**Lab Sample ID: LCSD 410-332220/3-A**  
**Matrix: Water**  
**Analysis Batch: 333356**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 332220**

| Analyte                              | Spike Added | LCSD   | LCSD      | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|-----|-----------|
|                                      |             | Result | Qualifier |      |   |      |             |     |           |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 26.2   |           | ng/L |   | 102  | 59 - 145    | 5   | 30        |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 26.7   |           | ng/L |   | 104  | 51 - 145    | 4   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 27.0   |           | ng/L |   | 105  | 61 - 139    | 4   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 21.6   |           | ng/L |   | 93   | 58 - 134    | 6   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.1   |           | ng/L |   | 98   | 45 - 150    | 3   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 27.0   |           | ng/L |   | 105  | 56 - 138    | 2   | 30        |

Eurofins Lancaster Laboratories Environment Testing, LLC

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 101              |                  | 31 - 182      |
| 13C8 PFOA               | 97               |                  | 48 - 162      |
| 13C9 PFNA               | 107              |                  | 51 - 167      |
| 13C3 PFHxS              | 105              |                  | 28 - 188      |
| 13C8 PFOS               | 110              |                  | 51 - 159      |
| 13C6 PFDA               | 99               |                  | 49 - 163      |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

## LCMS

### Prep Batch: 332220

| Lab Sample ID       | Client Sample ID        | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|-------------------------|-----------|--------|---------|------------|
| 410-110021-1        | 52-3_POET_PRE_20221220  | Total/NA  | Water  | 537 IDA |            |
| 410-110021-2        | 52-3_POET_MID_20221220  | Total/NA  | Water  | 537 IDA |            |
| 410-110021-3        | 52-3_POET_POST_20221220 | Total/NA  | Water  | 537 IDA |            |
| MB 410-332220/1-A   | Method Blank            | Total/NA  | Water  | 537 IDA |            |
| LCS 410-332220/2-A  | Lab Control Sample      | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-332220/3-A | Lab Control Sample Dup  | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 333356

| Lab Sample ID       | Client Sample ID        | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|-------------------------|-----------|--------|---------|------------|
| 410-110021-1        | 52-3_POET_PRE_20221220  | Total/NA  | Water  | 537 IDA | 332220     |
| 410-110021-2        | 52-3_POET_MID_20221220  | Total/NA  | Water  | 537 IDA | 332220     |
| 410-110021-3        | 52-3_POET_POST_20221220 | Total/NA  | Water  | 537 IDA | 332220     |
| MB 410-332220/1-A   | Method Blank            | Total/NA  | Water  | 537 IDA | 332220     |
| LCS 410-332220/2-A  | Lab Control Sample      | Total/NA  | Water  | 537 IDA | 332220     |
| LCSD 410-332220/3-A | Lab Control Sample Dup  | Total/NA  | Water  | 537 IDA | 332220     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

**Client Sample ID: 52-3\_POET\_PRE\_20221220**

**Lab Sample ID: 410-110021-1**

Date Collected: 12/20/22 10:30

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR          | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D          | ELLE | 01/06/23 23:04       |

**Client Sample ID: 52-3\_POET\_MID\_20221220**

**Lab Sample ID: 410-110021-2**

Date Collected: 12/20/22 10:32

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR          | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D          | ELLE | 01/06/23 23:15       |

**Client Sample ID: 52-3\_POET\_POST\_20221220**

**Lab Sample ID: 410-110021-3**

Date Collected: 12/20/22 10:35

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR          | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D          | ELLE | 01/06/23 23:26       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110021-1

---

| Lab Sample ID | Client Sample ID        | Matrix | Collected      | Received       |
|---------------|-------------------------|--------|----------------|----------------|
| 410-110021-1  | 52-3_POET_PRE_20221220  | Water  | 12/20/22 10:30 | 12/21/22 11:40 |
| 410-110021-2  | 52-3_POET_MID_20221220  | Water  | 12/20/22 10:32 | 12/21/22 11:40 |
| 410-110021-3  | 52-3_POET_POST_20221220 | Water  | 12/20/22 10:35 | 12/21/22 11:40 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



# Environmental Analysis Request/Cha



410-110021 Chain of Custody



Lancaster Laboratories  
Environmental

Acct. # \_\_\_\_\_ Group # \_\_\_\_\_ Sample # \_\_\_\_\_

|  |  |  |  |   |  |                                      |   |                                 |   |           |       |                         |   |  |
|--|--|--|--|---|--|--------------------------------------|---|---------------------------------|---|-----------|-------|-------------------------|---|--|
| Client: <b>Sanborn Head &amp; Associates</b>   |  |  |  | <b>Matrix</b>   |  | <b>Analyses Requested</b>            |   |                                 |   |           |       | <b>For Lab Use Only</b> |   |  |
| Project Name/#: N. Monmouth PFAS 5197.01   |  | Site ID #:   |  | <input type="checkbox"/> Tissue                                 | <input checked="" type="checkbox"/> Ground | <input type="checkbox"/> Surface     | <b>Preservation and Filtration Codes</b>            |                                 |   |           |       |                         | SF # _____  |  |
| Project Manager: Andrew Buchy  |  | P.O. #: 5197.01  |  | <input type="checkbox"/> Potable                                | <input type="checkbox"/> NPDES             | <input type="checkbox"/> Field Blank |   |                                 |   |           |       |                         | SCR # _____   |  |
| Sampler: Don Kelsey  |  | PWSID #:   |  | <input type="checkbox"/> Soil                                   | <input type="checkbox"/> Water             | <input type="checkbox"/> Other:      | PFAS 537 Mod with isotope dilution<br>(6 compounds) |                                 |   |           |       |                         | Preservation Codes<br>H = HCl      T = Thiosulfate<br>N = HNO <sub>3</sub> B = NaOH<br>S = H <sub>2</sub> SO <sub>4</sub> P = H <sub>3</sub> PO <sub>4</sub><br>F = Field Filtered      O = Other |  |
| Phone #: 603-229-1900  |  | Quote #:   |  | <input type="checkbox"/> Sediment                               | <input type="checkbox"/> Water             | <input type="checkbox"/> Other:      |   |                                 |   |           |       |                         | <b>Total # of Containers</b>  |  |
| State where samples were collected: ME   |  | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/> |  | <b>Collection</b>   |  |                                      |   |                                 |   |           |       |                         |   |  |
|  |  | Date   | Time   | Grab  | Composite                                  |                                      |   |                                 |   |           |       |                         |   |  |
| Sample Identification  |  |  |  |   |  |                                      |   |                                 |   |           |       |                         |   |  |
| 52-3_POET_Pre_20221220   |  | 12/20/2022   | 10:30  | X   |  | X                                    |   | 2                               | X |           |       |                         | Report to RL (no J-flags)   |  |
| 52-3_POET_Mid_20221220   |  | 12/20/2022   | 10:32  | X   |  | X                                    |   | 2                               | X |           |       |                         | Report to RL (no J-flags)   |  |
| 52-3_POET_Post_20221220  |  | 12/20/2022   | 10:35  | X   |  | X                                    |   | 2                               | X |           |       |                         | Report to RL (no J-flags)   |  |
|  |  |  |  |   |  |                                      |   |                                 |   |           |       |                         |   |  |
|  |  |  |  |   |  |                                      |   |                                 |   |           |       |                         |   |  |
|  |  |  |  |   |  |                                      |   |                                 |   |           |       |                         |   |  |
|  |  |  |  |   |  |                                      |   |                                 |   |           |       |                         |   |  |
|  |  |  |  |   |  |                                      |   |                                 |   |           |       |                         |   |  |
|  |  |  |  |   |  |                                      |   |                                 |   |           |       |                         |   |  |
| Turnaround Time Requested (TAT) (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |  | (Rush TAT is subject to laboratory approval and surcharges)              |  | Relinquished by: <i>[Signature]</i>                             |  | Date                                 | Time  | Received by:                    |   | Date      | Time  |                         |   |  |
| Date results are needed:   |  |  |  | Relinquished by:  |  | Date                                 | Time  | Received by:                    |   | Date      | Time  |                         |   |  |
| Rush results requested by (please check): E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>                   |  |  |  | Relinquished by:  |  | Date                                 | Time  | Received by:                    |   | Date      | Time  |                         |   |  |
| E-mail Address:  |  |  |  | Relinquished by:  |  | Date                                 | Time  | Received by:                    |   | Date      | Time  |                         |   |  |
| Phone:   |  |  |  | Relinquished by:  |  | Date                                 | Time  | Received by:                    |   | Date      | Time  |                         |   |  |
| Data Package Options (please check if required)  |  |  |  | Relinquished by:  |  | Date                                 | Time  | Received by:                    |   | Date      | Time  |                         |   |  |
| Level I  | <input type="checkbox"/>                   | MA MCP   | <input type="checkbox"/>                                 | Relinquished by:  |  | Date                                 | Time  | Received by:                    |   | Date      | Time  |                         |   |  |
| Level II   | <input checked="" type="checkbox"/>        | CT RCP   | <input type="checkbox"/>                                 | Relinquished by:  |  | Date                                 | Time  | Received by: <i>[Signature]</i> |   | 12/21/22  | 11:40 |                         |   |  |
| Level VI   | <input type="checkbox"/>                   | TX TRRP-13   | <input type="checkbox"/>                                 | Relinquished by:  |  | Date                                 | Time  | Received by:                    |   | Date      | Time  |                         |   |  |
| NJ DKQP  | <input type="checkbox"/>                   | NYSDEC Category  | <input type="checkbox"/> A or <input type="checkbox"/> B | Relinquished by Commercial Carrier:                             |  |                                      |   | Temperature upon receipt        |   | 29/2.0 °C |       |                         |   |  |
| EQiS 4-file format/SHA   |  |  |  | UPS _____ FedEx <input checked="" type="checkbox"/> Other _____ |  |                                      |   |                                 |   |           |       |                         |   |  |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  | If yes, format: _____ Standard (flat file) |  |  |   |  |                                      |   |                                 |   |           |       |                         |   |  |

*[Signature]*  
1/9/2023

## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-110021-1

Login Number: 110021

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: McBeth, Jessica

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 2/13/2023 10:37:08 AM

**JOB DESCRIPTION**

N Monmouth PFAS 5197.01

**JOB NUMBER**

410-112195-1

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
2/13/2023 10:37:08 AM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 10 |
| QC Sample Results . . . . .        | 11 |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 16 |
| Sample Summary . . . . .           | 17 |
| Chain of Custody . . . . .         | 18 |
| Receipt Checklists . . . . .       | 19 |

# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112195-1

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112195-1

---

## Job ID: 410-112195-1

---

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

### Narrative

---

#### Job Narrative 410-112195-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 1/13/2023 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.7° C.

#### Receipt Exceptions

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): 52-3\_MID\_20230112 (410-112195-2). The container labels list 12:00, while the COC does not list a time. The client was contacted, and the lab was instructed to <EXPLANATION\_REQUIRED>.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): 52-3\_POST\_20230112 (410-112195-3). The container labels list 12:05, while the COC does not list a time. The client was contacted, and the lab was instructed to <EXPLANATION\_REQUIRED>.

#### LCMS

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112195-1

## Client Sample ID: 52-3\_PRE\_20230112

## Lab Sample ID: 410-112195-1

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 6.3    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 42     |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 2.8    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 18     |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-3\_MID\_20230112

## Lab Sample ID: 410-112195-2

No Detections.

## Client Sample ID: 52-3\_POST\_20230112

## Lab Sample ID: 410-112195-3

No Detections.

## Client Sample ID: FB-01\_20230112

## Lab Sample ID: 410-112195-4

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112195-1

**Client Sample ID: 52-3\_PRE\_20230112**

**Lab Sample ID: 410-112195-1**

**Date Collected: 01/12/23 11:55**

**Matrix: Water**

**Date Received: 01/13/23 09:50**

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 6.3    |           | 1.7 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 22:27 | 1       |
| Perfluorooctanoic acid (PFOA)        | 42     |           | 1.7 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 22:27 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 22:27 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 2.8    |           | 1.7 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 22:27 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 18     |           | 1.7 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 22:27 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 22:27 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 95        |           | 31 - 182 | 01/26/23 07:18 | 01/28/23 22:27 | 1       |
| 13C8 PFOA        | 93        |           | 48 - 162 | 01/26/23 07:18 | 01/28/23 22:27 | 1       |
| 13C9 PFNA        | 88        |           | 51 - 167 | 01/26/23 07:18 | 01/28/23 22:27 | 1       |
| 13C3 PFHxS       | 95        |           | 28 - 188 | 01/26/23 07:18 | 01/28/23 22:27 | 1       |
| 13C8 PFOS        | 86        |           | 51 - 159 | 01/26/23 07:18 | 01/28/23 22:27 | 1       |
| 13C6 PFDA        | 96        |           | 49 - 163 | 01/26/23 07:18 | 01/28/23 22:27 | 1       |

**Client Sample ID: 52-3\_MID\_20230112**

**Lab Sample ID: 410-112195-2**

**Date Collected: 01/12/23 12:00**

**Matrix: Water**

**Date Received: 01/13/23 09:50**

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7   |           | 1.7 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 22:38 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 22:38 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 22:38 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7   |           | 1.7 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 22:38 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.7   |           | 1.7 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 22:38 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 22:38 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 115       |           | 31 - 182 | 01/26/23 07:18 | 01/28/23 22:38 | 1       |
| 13C8 PFOA        | 86        |           | 48 - 162 | 01/26/23 07:18 | 01/28/23 22:38 | 1       |
| 13C9 PFNA        | 102       |           | 51 - 167 | 01/26/23 07:18 | 01/28/23 22:38 | 1       |
| 13C3 PFHxS       | 106       |           | 28 - 188 | 01/26/23 07:18 | 01/28/23 22:38 | 1       |
| 13C8 PFOS        | 98        |           | 51 - 159 | 01/26/23 07:18 | 01/28/23 22:38 | 1       |
| 13C6 PFDA        | 98        |           | 49 - 163 | 01/26/23 07:18 | 01/28/23 22:38 | 1       |

**Client Sample ID: 52-3\_POST\_20230112**

**Lab Sample ID: 410-112195-3**

**Date Collected: 01/12/23 12:05**

**Matrix: Water**

**Date Received: 01/13/23 09:50**

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.6   |           | 1.6 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 22:49 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.6   |           | 1.6 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 22:49 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.6   |           | 1.6 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 22:49 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.6   |           | 1.6 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 22:49 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.6   |           | 1.6 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 22:49 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.6   |           | 1.6 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 22:49 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 98        |           | 31 - 182 | 01/26/23 07:18 | 01/28/23 22:49 | 1       |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112195-1

**Client Sample ID: 52-3\_POST\_20230112**

**Lab Sample ID: 410-112195-3**

**Date Collected: 01/12/23 12:05**

**Matrix: Water**

**Date Received: 01/13/23 09:50**

**Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)**

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C8 PFOA               | 89               |                  | 48 - 162      | 01/26/23 07:18  | 01/28/23 22:49  | 1              |
| 13C9 PFNA               | 96               |                  | 51 - 167      | 01/26/23 07:18  | 01/28/23 22:49  | 1              |
| 13C3 PFHxS              | 92               |                  | 28 - 188      | 01/26/23 07:18  | 01/28/23 22:49  | 1              |
| 13C8 PFOS               | 95               |                  | 51 - 159      | 01/26/23 07:18  | 01/28/23 22:49  | 1              |
| 13C6 PFDA               | 81               |                  | 49 - 163      | 01/26/23 07:18  | 01/28/23 22:49  | 1              |

**Client Sample ID: FB-01\_20230112**

**Lab Sample ID: 410-112195-4**

**Date Collected: 01/12/23 12:15**

**Matrix: Water**

**Date Received: 01/13/23 09:50**

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| <i>Analyte</i>                       | <i>Result</i> | <i>Qualifier</i> | <i>RL</i> | <i>MDL</i> | <i>Unit</i> | <i>D</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|--------------------------------------|---------------|------------------|-----------|------------|-------------|----------|-----------------|-----------------|----------------|
| Perfluoroheptanoic acid (PFHpA)      | <1.6          |                  | 1.6       |            | ng/L        |          | 01/26/23 07:18  | 01/28/23 23:00  | 1              |
| Perfluorooctanoic acid (PFOA)        | <1.6          |                  | 1.6       |            | ng/L        |          | 01/26/23 07:18  | 01/28/23 23:00  | 1              |
| Perfluorononanoic acid (PFNA)        | <1.6          |                  | 1.6       |            | ng/L        |          | 01/26/23 07:18  | 01/28/23 23:00  | 1              |
| Perfluorohexanesulfonic acid (PFHxS) | <1.6          |                  | 1.6       |            | ng/L        |          | 01/26/23 07:18  | 01/28/23 23:00  | 1              |
| Perfluorooctanesulfonic acid (PFOS)  | <1.6          |                  | 1.6       |            | ng/L        |          | 01/26/23 07:18  | 01/28/23 23:00  | 1              |
| Perfluorodecanoic acid (PFDA)        | <1.6          |                  | 1.6       |            | ng/L        |          | 01/26/23 07:18  | 01/28/23 23:00  | 1              |

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C4 PFHpA              | 94               |                  | 31 - 182      | 01/26/23 07:18  | 01/28/23 23:00  | 1              |
| 13C8 PFOA               | 73               |                  | 48 - 162      | 01/26/23 07:18  | 01/28/23 23:00  | 1              |
| 13C9 PFNA               | 96               |                  | 51 - 167      | 01/26/23 07:18  | 01/28/23 23:00  | 1              |
| 13C3 PFHxS              | 85               |                  | 28 - 188      | 01/26/23 07:18  | 01/28/23 23:00  | 1              |
| 13C8 PFOS               | 95               |                  | 51 - 159      | 01/26/23 07:18  | 01/28/23 23:00  | 1              |
| 13C6 PFDA               | 83               |                  | 49 - 163      | 01/26/23 07:18  | 01/28/23 23:00  | 1              |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112195-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

| Lab Sample ID       | Client Sample ID       | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|---------------------|------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                     |                        | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-112195-1        | 52-3_PRE_20230112      | 95  | 93                 | 88                 | 95                 | 86                 | 96                 |
| 410-112195-2        | 52-3_MID_20230112      | 115   | 86                 | 102                | 106                | 98                 | 98                 |
| 410-112195-3        | 52-3_POST_20230112     | 98  | 89                 | 96                 | 92                 | 95                 | 81                 |
| 410-112195-4        | FB-01_20230112         | 94  | 73                 | 96                 | 85                 | 95                 | 83                 |
| LCS 410-338788/3-A  | Lab Control Sample     | 85  | 75                 | 86                 | 82                 | 89                 | 84                 |
| LCSD 410-338788/4-A | Lab Control Sample Dup | 91  | 87                 | 102                | 93                 | 106                | 91                 |
| MB 410-338788/1-A   | Method Blank           | 77  | 71                 | 92                 | 77                 | 81                 | 72                 |

### Surrogate Legend

C4PFHA = 13C4 PFHpA  
 C8PFOA = 13C8 PFOA  
 C9PFNA = 13C9 PFNA  
 C3PFHS = 13C3 PFHxS  
 C8PFOS = 13C8 PFOS  
 C6PFDA = 13C6 PFDA

# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112195-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-338788/1-A**  
**Matrix: Water**  
**Analysis Batch: 339461**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 338788**

| Analyte                              | MB Result | MB Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|--------------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <2.0      |              | 2.0 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0      |              | 2.0 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0      |              | 2.0 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0      |              | 2.0 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0      |              | 2.0 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0      |              | 2.0 |     | ng/L |   | 01/26/23 07:18 | 01/28/23 21:42 | 1       |

| Isotope Dilution | MB %Recovery | MB Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|--------------|--------------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 77           |              | 31 - 182 | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| 13C8 PFOA        | 71           |              | 48 - 162 | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| 13C9 PFNA        | 92           |              | 51 - 167 | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| 13C3 PFHxS       | 77           |              | 28 - 188 | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| 13C8 PFOS        | 81           |              | 51 - 159 | 01/26/23 07:18 | 01/28/23 21:42 | 1       |
| 13C6 PFDA        | 72           |              | 49 - 163 | 01/26/23 07:18 | 01/28/23 21:42 | 1       |

**Lab Sample ID: LCS 410-338788/3-A**  
**Matrix: Water**  
**Analysis Batch: 339461**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 338788**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 27.8       |               | ng/L |   | 109  | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 33.6       |               | ng/L |   | 131  | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 30.2       |               | ng/L |   | 118  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 26.2       |               | ng/L |   | 112  | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 27.9       |               | ng/L |   | 118  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 29.1       |               | ng/L |   | 114  | 56 - 138    |

| Isotope Dilution | LCS %Recovery | LCS Qualifier | Limits   |
|------------------|---------------|---------------|----------|
| 13C4 PFHpA       | 85            |               | 31 - 182 |
| 13C8 PFOA        | 75            |               | 48 - 162 |
| 13C9 PFNA        | 86            |               | 51 - 167 |
| 13C3 PFHxS       | 82            |               | 28 - 188 |
| 13C8 PFOS        | 89            |               | 51 - 159 |
| 13C6 PFDA        | 84            |               | 49 - 163 |

**Lab Sample ID: LCSD 410-338788/4-A**  
**Matrix: Water**  
**Analysis Batch: 339461**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 338788**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 32.9        |                | ng/L |   | 128  | 59 - 145    | 17  | 30        |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 35.1        |                | ng/L |   | 137  | 51 - 145    | 4   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 30.0        |                | ng/L |   | 117  | 61 - 139    | 1   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 27.6        |                | ng/L |   | 118  | 58 - 134    | 5   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 27.7        |                | ng/L |   | 117  | 45 - 150    | 1   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 24.6        |                | ng/L |   | 96   | 56 - 138    | 17  | 30        |

Eurofins Lancaster Laboratories Environment Testing, LLC

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112195-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCS D LCS D</i> |                  | <i>Limits</i> |
|-------------------------|--------------------|------------------|---------------|
|                         | <i>%Recovery</i>   | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 91                 |                  | 31 - 182      |
| 13C8 PFOA               | 87                 |                  | 48 - 162      |
| 13C9 PFNA               | 102                |                  | 51 - 167      |
| 13C3 PFHxS              | 93                 |                  | 28 - 188      |
| 13C8 PFOS               | 106                |                  | 51 - 159      |
| 13C6 PFDA               | 91                 |                  | 49 - 163      |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112195-1

## LCMS

### Prep Batch: 338788

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-112195-1        | 52-3_PRE_20230112      | Total/NA  | Water  | 537 IDA |            |
| 410-112195-2        | 52-3_MID_20230112      | Total/NA  | Water  | 537 IDA |            |
| 410-112195-3        | 52-3_POST_20230112     | Total/NA  | Water  | 537 IDA |            |
| 410-112195-4        | FB-01_20230112         | Total/NA  | Water  | 537 IDA |            |
| MB 410-338788/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-338788/3-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-338788/4-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 339461

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-112195-1        | 52-3_PRE_20230112      | Total/NA  | Water  | 537 IDA | 338788     |
| 410-112195-2        | 52-3_MID_20230112      | Total/NA  | Water  | 537 IDA | 338788     |
| 410-112195-3        | 52-3_POST_20230112     | Total/NA  | Water  | 537 IDA | 338788     |
| 410-112195-4        | FB-01_20230112         | Total/NA  | Water  | 537 IDA | 338788     |
| MB 410-338788/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 338788     |
| LCS 410-338788/3-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 338788     |
| LCSD 410-338788/4-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 338788     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112195-1

**Client Sample ID: 52-3\_PRE\_20230112**

**Lab Sample ID: 410-112195-1**

**Date Collected: 01/12/23 11:55**

**Matrix: Water**

**Date Received: 01/13/23 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 338788       | M4QQ    | ELLE | 01/26/23 07:18       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 339461       | JVK6    | ELLE | 01/28/23 22:27       |

**Client Sample ID: 52-3\_MID\_20230112**

**Lab Sample ID: 410-112195-2**

**Date Collected: 01/12/23 12:00**

**Matrix: Water**

**Date Received: 01/13/23 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 338788       | M4QQ    | ELLE | 01/26/23 07:18       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 339461       | JVK6    | ELLE | 01/28/23 22:38       |

**Client Sample ID: 52-3\_POST\_20230112**

**Lab Sample ID: 410-112195-3**

**Date Collected: 01/12/23 12:05**

**Matrix: Water**

**Date Received: 01/13/23 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 338788       | M4QQ    | ELLE | 01/26/23 07:18       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 339461       | JVK6    | ELLE | 01/28/23 22:49       |

**Client Sample ID: FB-01\_20230112**

**Lab Sample ID: 410-112195-4**

**Date Collected: 01/12/23 12:15**

**Matrix: Water**

**Date Received: 01/13/23 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 338788       | M4QQ    | ELLE | 01/26/23 07:18       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 339461       | JVK6    | ELLE | 01/28/23 23:00       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112195-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |



# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112195-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-112195-1

---

| Lab Sample ID | Client Sample ID   | Matrix | Collected      | Received       |
|---------------|--------------------|--------|----------------|----------------|
| 410-112195-1  | 52-3_PRE_20230112  | Water  | 01/12/23 11:55 | 01/13/23 09:50 |
| 410-112195-2  | 52-3_MID_20230112  | Water  | 01/12/23 12:00 | 01/13/23 09:50 |
| 410-112195-3  | 52-3_POST_20230112 | Water  | 01/12/23 12:05 | 01/13/23 09:50 |
| 410-112195-4  | FB-01_20230112     | Water  | 01/12/23 12:15 | 01/13/23 09:50 |

---

1

2

3

4

5

6

7

8

9

10

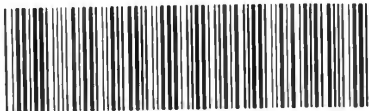
11

12

13

14

15



410-112195 Chain of Custody

ries

# Environmental Analysis Request/Chain of Custody

Acct. # \_\_\_\_\_

Group # \_\_\_\_\_

Sample # \_\_\_\_\_

|  |  |  |         |                                      |   |   |  |                          |   |        |      |                                    |  |                                    |                           |  |
|--|--|--|---------|--------------------------------------|---|---|--|--------------------------|---|--------|------|------------------------------------|--|------------------------------------|---------------------------|--|
| Client: <b>Sanborn Head &amp; Associates</b>   |  |  |         | <b>Matrix</b>                        |   |   | <b>Analyses Requested</b>  |                          |   |        |      | <b>For Lab Use Only</b>            |  |                                    |                           |  |
| Project Name/#: N. Monmouth PFAS 5197.01   |  | Site ID #:   |         | <input type="checkbox"/> Tissue      | <input type="checkbox"/> Ground           | <input type="checkbox"/> Surface  | <b>Preservation and Filtration Codes</b>                                     |                          |   |        |      | SF #: _____                        |  |                                    |                           |  |
| Project Manager: Andrew Buchy  |  | P.O. #: 5197.01  |         | <input type="checkbox"/> Potable     | <input checked="" type="checkbox"/> NPDES | <input type="checkbox"/> Field Blank  |  |                          |   |        |      | SCR #: _____                       |  |                                    |                           |  |
| Sampler: Don Kelsey  |  | PWSID #:   |         | <input type="checkbox"/> Sediment    | <input type="checkbox"/> Water            | <input type="checkbox"/> Other:   | Total # of Containers<br>PFAS 537 Mod with isotope dilution<br>(6 compounds) |                          |   |        |      | Preservation Codes                 |  |                                    |                           |  |
| Phone #: 603-229-1900  |  | Quote #:   |         | <input type="checkbox"/> Soil        | <input type="checkbox"/> Water            | <input type="checkbox"/> Other:   |  |                          |   |        |      | H = HCl                            |  | T = Thio sulfate                   |                           |  |
| State where samples were collected: ME   |  | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/> |         | <b>Collection</b>                    |   |   |  |                          |   |        |      | N = HNO <sub>3</sub>               |  | B = NaOH                           |                           |  |
|  |  |  | Date    | Time                                 | Grab                                      | Composite   |  |                          |   |        |      | S = H <sub>2</sub> SO <sub>4</sub> |  | P = H <sub>3</sub> PO <sub>4</sub> |                           |  |
| Sample Identification  |  |  |         |                                      |   |   |  |                          |   |        |      | F = Field Filtered                 |  | O = Other                          |                           |  |
| 52-3-PRE-20230112  |  |  | 11/2/23 | 11:55                                | X   |   | X  | 2                        | X |        |      |                                    |  |                                    | Remarks                   |  |
| 52-3-MID-20230112  |  |  | ↓       |                                      | ↓   |   | ↓  | ↓                        | X |        |      |                                    |  |                                    | Report to RL (no J-flags) |  |
| 52-3-POST-20230112   |  |  | ↓       |                                      | ↓   |   | ↓  | ↓                        | X |        |      |                                    |  |                                    |                           |  |
| FB-01-20230112   |  |  | ↓       | 12:15                                |   |   | ↓  | ↓                        | X |        |      |                                    |  |                                    |                           |  |
| Turnaround Time Requested (TAT) (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |  |  |         | Relinquished by: <i>[Signature]</i>  |   | Date  | Time   | Received by:             |   | Date   | Time |                                    |  |                                    |                           |  |
| (Rush TAT is subject to laboratory approval and surcharges)  |  |  |         |                                      |   | 11/2/23   | 16:00  |                          |   |        |      |                                    |  |                                    |                           |  |
| Date results are needed:   |  |  |         | Relinquished by:                     |   | Date  | Time   | Received by:             |   | Date   | Time |                                    |  |                                    |                           |  |
| Rush results requested by (please check): E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>                   |  |  |         |                                      |   |   |  |                          |   |        |      |                                    |  |                                    |                           |  |
| E-mail Address:  |  |  |         | Relinquished by:                     |   | Date  | Time   | Received by:             |   | Date   | Time |                                    |  |                                    |                           |  |
| Phone:   |  |  |         |                                      |   |   |  |                          |   |        |      |                                    |  |                                    |                           |  |
| Data Package Options (please check if required)  |  |  |         | Relinquished by:                     |   | Date  | Time   | Received by:             |   | Date   | Time |                                    |  |                                    |                           |  |
| Level I <input type="checkbox"/> MA MCP <input type="checkbox"/>   |  |  |         |                                      |   |   |  |                          |   |        |      |                                    |  |                                    |                           |  |
| Level II <input checked="" type="checkbox"/> CT RCP <input type="checkbox"/>   |  |  |         |                                      |   |   |  |                          |   |        |      |                                    |  |                                    |                           |  |
| Level VI <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/>  |  |  |         |                                      |   |   |  |                          |   |        |      |                                    |  |                                    |                           |  |
| NJ DKQP <input type="checkbox"/> NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B                  |  |  |         | Relinquished by Commercial Carrier:  |   |   |  |                          |   |        |      |                                    |  |                                    |                           |  |
| EQUIS 4-file format/SHA  |  |  |         |                                      |   |   |  |                          |   |        |      |                                    |  |                                    |                           |  |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |  |  |         | If yes, format: Standard (flat file) |   | UPS <input type="checkbox"/> FedEx <input checked="" type="checkbox"/> Other <input type="checkbox"/> |  | Temperature upon receipt |   | 2.7 °C |      |                                    |  |                                    |                           |  |

mb

MR

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15

# Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-112195-1

**Login Number: 112195**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: Ballard, Megan**

| Question   | Answer | Comment                             |
|--|--------|-------------------------------------|
| The cooler's custody seal is intact.   | True   |                                     |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |                                     |
| Samples were received on ice.  | True   |                                     |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |                                     |
| Cooler Temperature is recorded.  | True   |                                     |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |                                     |
| WV: Container Temperature is recorded.   | N/A    |                                     |
| COC is present.  | True   |                                     |
| COC is filled out in ink and legible.  | True   |                                     |
| COC is filled out with all pertinent information.                                    | True   |                                     |
| There are no discrepancies between the containers received and the COC.              | False  | Refer to Job Narrative for details. |
| Sample containers have legible labels.   | True   |                                     |
| Containers are not broken or leaking.  | True   |                                     |
| Sample collection date/times are provided.   | True   |                                     |
| Appropriate sample containers are used.  | True   |                                     |
| Sample bottles are completely filled.  | True   |                                     |
| There is sufficient vol. for all requested analyses.                                 | True   |                                     |
| Is the Field Sampler's name present on COC?  | True   |                                     |
| Sample custody seals are intact.   | N/A    |                                     |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |                                     |

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 1/9/2023 9:08:39 PM

**JOB DESCRIPTION**

N Monmouth PFAS

**JOB NUMBER**

410-110018-1

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
1/9/2023 9:08:39 PM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---





# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 10 |
| QC Sample Results . . . . .        | 11 |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 16 |
| Sample Summary . . . . .           | 17 |
| Chain of Custody . . . . .         | 18 |
| Receipt Checklists . . . . .       | 19 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110018-1

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| ▫              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110018-1

---

**Job ID: 410-110018-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative  
410-110018-1**

**Receipt**

The samples were received on 12/21/2022 11:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.6°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110018-1

## Client Sample ID: 52-4\_POET\_PRE\_20221220

Lab Sample ID: 410-110018-1

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 6.2    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 40     |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 2.9    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 21     |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-4\_POET\_MID\_20221220

Lab Sample ID: 410-110018-2

No Detections.

## Client Sample ID: 52-4\_POET\_POST\_20221220

Lab Sample ID: 410-110018-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110018-1

**Client Sample ID: 52-4\_POET\_PRE\_20221220**

**Lab Sample ID: 410-110018-1**

Date Collected: 12/20/22 11:21

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 6.2       |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 22:31 | 1       |
| Perfluorooctanoic acid (PFOA)        | 40        |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 22:31 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 22:31 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 2.9       |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 22:31 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 21        |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 22:31 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 22:31 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 109       |           | 31 - 182 |     |      |   | 01/03/23 17:22 | 01/06/23 22:31 | 1       |
| 13C8 PFOA                            | 104       |           | 48 - 162 |     |      |   | 01/03/23 17:22 | 01/06/23 22:31 | 1       |
| 13C9 PFNA                            | 126       |           | 51 - 167 |     |      |   | 01/03/23 17:22 | 01/06/23 22:31 | 1       |
| 13C3 PFHxS                           | 110       |           | 28 - 188 |     |      |   | 01/03/23 17:22 | 01/06/23 22:31 | 1       |
| 13C8 PFOS                            | 121       |           | 51 - 159 |     |      |   | 01/03/23 17:22 | 01/06/23 22:31 | 1       |
| 13C6 PFDA                            | 106       |           | 49 - 163 |     |      |   | 01/03/23 17:22 | 01/06/23 22:31 | 1       |

**Client Sample ID: 52-4\_POET\_MID\_20221220**

**Lab Sample ID: 410-110018-2**

Date Collected: 12/20/22 11:23

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.8      |           | 1.8      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 22:42 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.8      |           | 1.8      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 22:42 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.8      |           | 1.8      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 22:42 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.8      |           | 1.8      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 22:42 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.8      |           | 1.8      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 22:42 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.8      |           | 1.8      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 22:42 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 100       |           | 31 - 182 |     |      |   | 01/03/23 17:22 | 01/06/23 22:42 | 1       |
| 13C8 PFOA                            | 97        |           | 48 - 162 |     |      |   | 01/03/23 17:22 | 01/06/23 22:42 | 1       |
| 13C9 PFNA                            | 117       |           | 51 - 167 |     |      |   | 01/03/23 17:22 | 01/06/23 22:42 | 1       |
| 13C3 PFHxS                           | 100       |           | 28 - 188 |     |      |   | 01/03/23 17:22 | 01/06/23 22:42 | 1       |
| 13C8 PFOS                            | 110       |           | 51 - 159 |     |      |   | 01/03/23 17:22 | 01/06/23 22:42 | 1       |
| 13C6 PFDA                            | 97        |           | 49 - 163 |     |      |   | 01/03/23 17:22 | 01/06/23 22:42 | 1       |

**Client Sample ID: 52-4\_POET\_POST\_20221220**

**Lab Sample ID: 410-110018-3**

Date Collected: 12/20/22 11:25

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 22:53 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 22:53 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 22:53 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 22:53 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 22:53 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/06/23 22:53 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 110       |           | 31 - 182 |     |      |   | 01/03/23 17:22 | 01/06/23 22:53 | 1       |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110018-1

Client Sample ID: 52-4\_POET\_POST\_20221220

Lab Sample ID: 410-110018-3

Date Collected: 12/20/22 11:25

Matrix: Water

Date Received: 12/21/22 11:40

## Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C8 PFOA               | 101              |                  | 48 - 162      | 01/03/23 17:22  | 01/06/23 22:53  | 1              |
| 13C9 PFNA               | 112              |                  | 51 - 167      | 01/03/23 17:22  | 01/06/23 22:53  | 1              |
| 13C3 PFHxS              | 110              |                  | 28 - 188      | 01/03/23 17:22  | 01/06/23 22:53  | 1              |
| 13C8 PFOS               | 113              |                  | 51 - 159      | 01/03/23 17:22  | 01/06/23 22:53  | 1              |
| 13C6 PFDA               | 102              |                  | 49 - 163      | 01/03/23 17:22  | 01/06/23 22:53  | 1              |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110018-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID        | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|-------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                         | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-110018-1       | 52-4_POET_PRE_20221220  | 109   | 104                | 126                | 110                | 121                | 106                |
| 410-110018-2       | 52-4_POET_MID_20221220  | 100   | 97                 | 117                | 100                | 110                | 97                 |
| 410-110018-3       | 52-4_POET_POST_20221220 | 110   | 101                | 112                | 110                | 113                | 102                |
| LCS 410-332220/2-A | Lab Control Sample      | 108   | 102                | 112                | 104                | 112                | 95                 |
| LCS 410-332220/3-A | Lab Control Sample Dup  | 101   | 97                 | 107                | 105                | 110                | 99                 |
| MB 410-332220/1-A  | Method Blank            | 110   | 105                | 111                | 115                | 112                | 101                |

### Surrogate Legend

C4PFHA = 13C4 PFHpA  
 C8PFOA = 13C8 PFOA  
 C9PFNA = 13C9 PFNA  
 C3PFHS = 13C3 PFHxS  
 C8PFOS = 13C8 PFOS  
 C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110018-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Lab Sample ID: MB 410-332220/1-A

Matrix: Water

Analysis Batch: 333356

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 332220

| Analyte                              | MB     | MB        | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |     |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 110       |           | 31 - 182 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C8 PFOA        | 105       |           | 48 - 162 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C9 PFNA        | 111       |           | 51 - 167 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C3 PFHxS       | 115       |           | 28 - 188 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C8 PFOS        | 112       |           | 51 - 159 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C6 PFDA        | 101       |           | 49 - 163 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |

Lab Sample ID: LCS 410-332220/2-A

Matrix: Water

Analysis Batch: 333356

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 332220

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 25.7       |               | ng/L |   | 100  | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 28.2       |               | ng/L |   | 110  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 23.0       |               | ng/L |   | 99   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.9       |               | ng/L |   | 101  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 26.4       |               | ng/L |   | 103  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 108       |           | 31 - 182 |
| 13C8 PFOA        | 102       |           | 48 - 162 |
| 13C9 PFNA        | 112       |           | 51 - 167 |
| 13C3 PFHxS       | 104       |           | 28 - 188 |
| 13C8 PFOS        | 112       |           | 51 - 159 |
| 13C6 PFDA        | 95        |           | 49 - 163 |

Lab Sample ID: LCSD 410-332220/3-A

Matrix: Water

Analysis Batch: 333356

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 332220

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-----------|
|                                      |             |             |                |      |   |      |             |     |           |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 26.7        |                | ng/L |   | 104  | 51 - 145    | 4   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 27.0        |                | ng/L |   | 105  | 61 - 139    | 4   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 21.6        |                | ng/L |   | 93   | 58 - 134    | 6   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.1        |                | ng/L |   | 98   | 45 - 150    | 3   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 27.0        |                | ng/L |   | 105  | 56 - 138    | 2   | 30        |

Eurofins Lancaster Laboratories Environment Testing, LLC



# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110018-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 101              |                  | 31 - 182      |
| 13C8 PFOA               | 97               |                  | 48 - 162      |
| 13C9 PFNA               | 107              |                  | 51 - 167      |
| 13C3 PFHxS              | 105              |                  | 28 - 188      |
| 13C8 PFOS               | 110              |                  | 51 - 159      |
| 13C6 PFDA               | 99               |                  | 49 - 163      |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110018-1

## LCMS

### Prep Batch: 332220

| Lab Sample ID       | Client Sample ID        | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|-------------------------|-----------|--------|---------|------------|
| 410-110018-1        | 52-4_POET_PRE_20221220  | Total/NA  | Water  | 537 IDA |            |
| 410-110018-2        | 52-4_POET_MID_20221220  | Total/NA  | Water  | 537 IDA |            |
| 410-110018-3        | 52-4_POET_POST_20221220 | Total/NA  | Water  | 537 IDA |            |
| MB 410-332220/1-A   | Method Blank            | Total/NA  | Water  | 537 IDA |            |
| LCS 410-332220/2-A  | Lab Control Sample      | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-332220/3-A | Lab Control Sample Dup  | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 333356

| Lab Sample ID       | Client Sample ID        | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|-------------------------|-----------|--------|---------|------------|
| 410-110018-1        | 52-4_POET_PRE_20221220  | Total/NA  | Water  | 537 IDA | 332220     |
| 410-110018-2        | 52-4_POET_MID_20221220  | Total/NA  | Water  | 537 IDA | 332220     |
| 410-110018-3        | 52-4_POET_POST_20221220 | Total/NA  | Water  | 537 IDA | 332220     |
| MB 410-332220/1-A   | Method Blank            | Total/NA  | Water  | 537 IDA | 332220     |
| LCS 410-332220/2-A  | Lab Control Sample      | Total/NA  | Water  | 537 IDA | 332220     |
| LCSD 410-332220/3-A | Lab Control Sample Dup  | Total/NA  | Water  | 537 IDA | 332220     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110018-1

**Client Sample ID: 52-4\_POET\_PRE\_20221220**

**Lab Sample ID: 410-110018-1**

Date Collected: 12/20/22 11:21

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR    | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D    | ELLE | 01/06/23 22:31       |

**Client Sample ID: 52-4\_POET\_MID\_20221220**

**Lab Sample ID: 410-110018-2**

Date Collected: 12/20/22 11:23

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR    | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D    | ELLE | 01/06/23 22:42       |

**Client Sample ID: 52-4\_POET\_POST\_20221220**

**Lab Sample ID: 410-110018-3**

Date Collected: 12/20/22 11:25

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR    | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D    | ELLE | 01/06/23 22:53       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110018-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110018-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110018-1

---

| Lab Sample ID | Client Sample ID        | Matrix | Collected      | Received       |
|---------------|-------------------------|--------|----------------|----------------|
| 410-110018-1  | 52-4_POET_PRE_20221220  | Water  | 12/20/22 11:21 | 12/21/22 11:40 |
| 410-110018-2  | 52-4_POET_MID_20221220  | Water  | 12/20/22 11:23 | 12/21/22 11:40 |
| 410-110018-3  | 52-4_POET_POST_20221220 | Water  | 12/20/22 11:25 | 12/21/22 11:40 |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Environmental Analysis Request/



410-110018 Chain of Custody



Lancaster Laboratories  
Environmental

Acct. # \_\_\_\_\_ Group # \_\_\_\_\_ Sample # \_\_\_\_\_

|   |                                     |                   |                          |   |                                   |                                 |   |  |                                  |                                |                                      |                         |  |                           |           |                           |
|---|-------------------------------------|-------------------|--------------------------|---|-----------------------------------|---------------------------------|---|--|----------------------------------|--------------------------------|--------------------------------------|-------------------------|--|---------------------------|-----------|---------------------------|
| Client: <b>Sanborn Head &amp; Associates</b>  |                                     |                   |                          | <b>Matrix</b>   |                                   |                                 |   | <b>Analyses Requested</b>                  |                                  |                                |                                      | <b>For Lab Use Only</b> |  |                           |           |                           |
| Project Name/#: N. Monmouth PFAS 5197.01  |                                     |                   |                          | Site ID #:  |                                   |                                 |   | <b>Preservation and Filtration Codes</b>   |                                  |                                |                                      | SF #: _____             |  |                           |           |                           |
| Project Manager: Andrew Buchy   |                                     |                   |                          | P.O. #: 5197.01   |                                   |                                 |   |  |                                  |                                |                                      | SCR #: _____            |  |                           |           |                           |
| Sampler: Don Kelsey   |                                     |                   |                          | PWSID #:  |                                   |                                 |   |  |                                  |                                |                                      |                         |  |                           |           |                           |
| Phone #: 603-229-1900   |                                     |                   |                          | Quote #:  |                                   |                                 |   |  |                                  |                                |                                      |                         |  |                           |           |                           |
| State where samples were collected: ME  |                                     |                   |                          | For Compliance Yes <input type="checkbox"/> No <input type="checkbox"/> |                                   |                                 |   |  |                                  |                                |                                      |                         |  |                           |           |                           |
| <b>Sample Identification</b>  |                                     | <b>Collection</b> |                          | Soil <input type="checkbox"/>   | Sediment <input type="checkbox"/> | Tissue <input type="checkbox"/> | Potable <input type="checkbox"/>          | Ground <input checked="" type="checkbox"/> | Surface <input type="checkbox"/> | NPDES <input type="checkbox"/> | Field Blank <input type="checkbox"/> | Total # of Containers   | PFAS 537 Mod with isotope dilution (6 compounds) | <b>Preservation Codes</b> |           |                           |
|   |                                     | Date              | Time                     |   |                                   |                                 |   |  |                                  |                                |                                      |                         |  | Grab                      | Composite | H = HCl                   |
| 52-4_POET_Pre_20221220  |                                     | 12/20/2022        | 11:21                    | X   |                                   |                                 |   | X  |                                  |                                |                                      | 2                       | X  |                           |           | Report to RL (no J-flags) |
| 52-4_POET_Mid_20221220  |                                     | 12/20/2022        | 11:23                    | X   |                                   |                                 |   | X  |                                  |                                |                                      | 2                       | X  |                           |           | Report to RL (no J-flags) |
| 52-4_POET_Post_20221220   |                                     | 12/20/2022        | 11:25                    | X   |                                   |                                 |   | X  |                                  |                                |                                      | 2                       | X  |                           |           | Report to RL (no J-flags) |
|   |                                     |                   |                          |   |                                   |                                 |   |  |                                  |                                |                                      |                         |  |                           |           |                           |
|   |                                     |                   |                          |   |                                   |                                 |   |  |                                  |                                |                                      |                         |  |                           |           |                           |
|   |                                     |                   |                          |   |                                   |                                 |   |  |                                  |                                |                                      |                         |  |                           |           |                           |
|   |                                     |                   |                          |   |                                   |                                 |   |  |                                  |                                |                                      |                         |  |                           |           |                           |
|   |                                     |                   |                          |   |                                   |                                 |   |  |                                  |                                |                                      |                         |  |                           |           |                           |
| <b>Turnaround Time Requested (TAT)</b> (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |                                     |                   |                          | Relinquished by: <i>[Signature]</i>                                     |                                   | Date                            | Time                                      | Received by:                               |                                  | Date                           | Time                                 |                         |  |                           |           |                           |
| (Rush TAT is subject to laboratory approval and surcharges)   |                                     |                   |                          |   |                                   | 12/20/22                        | 15:45                                     |  |                                  |                                |                                      |                         |  |                           |           |                           |
| Date results are needed:  |                                     |                   |                          | Relinquished by:  |                                   | Date                            | Time                                      | Received by:                               |                                  | Date                           | Time                                 |                         |  |                           |           |                           |
| Rush results requested by (please check): E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>                          |                                     |                   |                          |   |                                   |                                 |   |  |                                  |                                |                                      |                         |  |                           |           |                           |
| E-mail Address:   |                                     |                   |                          | Relinquished by:  |                                   | Date                            | Time                                      | Received by:                               |                                  | Date                           | Time                                 |                         |  |                           |           |                           |
| Phone:  |                                     |                   |                          |   |                                   |                                 |   |  |                                  |                                |                                      |                         |  |                           |           |                           |
| <b>Data Package Options</b> (please check if required)  |                                     |                   |                          | Relinquished by:  |                                   | Date                            | Time                                      | Received by:                               |                                  | Date                           | Time                                 |                         |  |                           |           |                           |
| Level I   | <input type="checkbox"/>            | MA MCP            | <input type="checkbox"/> |   |                                   |                                 |   |  |                                  |                                |                                      |                         |  |                           |           |                           |
| Level II  | <input checked="" type="checkbox"/> | CT RCP            | <input type="checkbox"/> |   |                                   |                                 |   |  |                                  |                                |                                      |                         |  |                           |           |                           |
| Level VI  | <input type="checkbox"/>            | TX TRRP-13        | <input type="checkbox"/> |   |                                   |                                 |   |  |                                  |                                |                                      |                         |  |                           |           |                           |
| NJ DKQP   | <input type="checkbox"/>            | NYSDEC Category   | <input type="checkbox"/> | A or  | <input type="checkbox"/>          | B                               |   |  |                                  |                                |                                      |                         |  |                           |           |                           |
| EQUS 4-file format/SHA  |                                     |                   |                          | Relinquished by Commercial Carrier:                                     |                                   |                                 |   | Temperature upon receipt                   |                                  | 29/2.0 °C                      |                                      |                         |  |                           |           |                           |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |                                     |                   |                          | If yes, format: Standard (flat file)                                    |                                   | UPS                             | FedEx <input checked="" type="checkbox"/> | Other                                      |                                  |                                |                                      |                         |  |                           |           |                           |

*dkr*

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15

## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-110018-1

Login Number: 110018

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: McBeth, Jessica

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |



 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 1/9/2023 6:15:15 AM

**JOB DESCRIPTION**

N Monmouth PFAS

**JOB NUMBER**

410-110275-1

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
1/9/2023 6:15:15 AM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 10 |
| QC Sample Results . . . . .        | 11 |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 16 |
| Sample Summary . . . . .           | 17 |
| Chain of Custody . . . . .         | 18 |
| Receipt Checklists . . . . .       | 19 |

# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110275-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description                                     |
|-----------|---|
| I         | Value is EMPC (estimated maximum possible concentration). |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110275-1

---

**Job ID: 410-110275-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative  
410-110275-1**

**Receipt**

The samples were received on 12/22/2022 11:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.5°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110275-1

## Client Sample ID: 52-12\_POET\_Pre\_20221221

Lab Sample ID: 410-110275-1

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 3.2    |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 21     |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 2.0    |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 7.9    | I         | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-12\_POET\_Mid\_20221221

Lab Sample ID: 410-110275-2

| Analyte                             | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 3.6    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-12\_POET\_Post\_20221221

Lab Sample ID: 410-110275-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110275-1

**Client Sample ID: 52-12\_POET\_Pre\_20221221**

**Lab Sample ID: 410-110275-1**

Date Collected: 12/21/22 14:40

Matrix: Water

Date Received: 12/22/22 11:00

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 3.2       |           | 1.6      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:39 | 1       |
| Perfluorooctanoic acid (PFOA)        | 21        |           | 1.6      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:39 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:39 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 2.0       |           | 1.6      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:39 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 7.9       | I         | 1.6      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:39 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:39 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 115       |           | 31 - 182 |     |      |   | 01/04/23 15:27 | 01/06/23 09:39 | 1       |
| 13C8 PFOA                            | 107       |           | 48 - 162 |     |      |   | 01/04/23 15:27 | 01/06/23 09:39 | 1       |
| 13C9 PFNA                            | 124       |           | 51 - 167 |     |      |   | 01/04/23 15:27 | 01/06/23 09:39 | 1       |
| 13C3 PFHxS                           | 120       |           | 28 - 188 |     |      |   | 01/04/23 15:27 | 01/06/23 09:39 | 1       |
| 13C8 PFOS                            | 124       |           | 51 - 159 |     |      |   | 01/04/23 15:27 | 01/06/23 09:39 | 1       |
| 13C6 PFDA                            | 112       |           | 49 - 163 |     |      |   | 01/04/23 15:27 | 01/06/23 09:39 | 1       |

**Client Sample ID: 52-12\_POET\_Mid\_20221221**

**Lab Sample ID: 410-110275-2**

Date Collected: 12/21/22 14:42

Matrix: Water

Date Received: 12/22/22 11:00

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7      |           | 1.7      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:50 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:50 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:50 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7      |           | 1.7      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:50 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 3.6       |           | 1.7      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:50 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:50 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 119       |           | 31 - 182 |     |      |   | 01/04/23 15:27 | 01/06/23 09:50 | 1       |
| 13C8 PFOA                            | 116       |           | 48 - 162 |     |      |   | 01/04/23 15:27 | 01/06/23 09:50 | 1       |
| 13C9 PFNA                            | 123       |           | 51 - 167 |     |      |   | 01/04/23 15:27 | 01/06/23 09:50 | 1       |
| 13C3 PFHxS                           | 124       |           | 28 - 188 |     |      |   | 01/04/23 15:27 | 01/06/23 09:50 | 1       |
| 13C8 PFOS                            | 121       |           | 51 - 159 |     |      |   | 01/04/23 15:27 | 01/06/23 09:50 | 1       |
| 13C6 PFDA                            | 112       |           | 49 - 163 |     |      |   | 01/04/23 15:27 | 01/06/23 09:50 | 1       |

**Client Sample ID: 52-12\_POET\_Post\_20221221**

**Lab Sample ID: 410-110275-3**

Date Collected: 12/21/22 14:44

Matrix: Water

Date Received: 12/22/22 11:00

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7   |           | 1.7 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 10:01 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 10:01 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 10:01 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7   |           | 1.7 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 10:01 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.7   |           | 1.7 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 10:01 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 10:01 | 1       |



# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110275-1

**Client Sample ID: 52-12\_POET\_Post\_20221221**

**Lab Sample ID: 410-110275-3**

**Date Collected: 12/21/22 14:44**

**Matrix: Water**

**Date Received: 12/22/22 11:00**

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C4 PFHpA              | 126              |                  | 31 - 182      | 01/04/23 15:27  | 01/06/23 10:01  | 1              |
| 13C8 PFOA               | 117              |                  | 48 - 162      | 01/04/23 15:27  | 01/06/23 10:01  | 1              |
| 13C9 PFNA               | 131              |                  | 51 - 167      | 01/04/23 15:27  | 01/06/23 10:01  | 1              |
| 13C3 PFHxS              | 126              |                  | 28 - 188      | 01/04/23 15:27  | 01/06/23 10:01  | 1              |
| 13C8 PFOS               | 127              |                  | 51 - 159      | 01/04/23 15:27  | 01/06/23 10:01  | 1              |
| 13C6 PFDA               | 115              |                  | 49 - 163      | 01/04/23 15:27  | 01/06/23 10:01  | 1              |



# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110275-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID         | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|--------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                          | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-110275-1       | 52-12_POET_Pre_20221221  | 115   | 107                | 124                | 120                | 124                | 112                |
| 410-110275-2       | 52-12_POET_Mid_20221221  | 119   | 116                | 123                | 124                | 121                | 112                |
| 410-110275-3       | 52-12_POET_Post_20221221 | 126   | 117                | 131                | 126                | 127                | 115                |
| LCS 410-332558/2-A | Lab Control Sample       | 125   | 124                | 130                | 124                | 128                | 122                |
| LCS 410-332558/3-A | Lab Control Sample Dup   | 117   | 117                | 127                | 122                | 127                | 124                |
| MB 410-332558/1-A  | Method Blank             | 119   | 116                | 125                | 115                | 121                | 115                |

### Surrogate Legend

C4PFHA = 13C4 PFHpA  
 C8PFOA = 13C8 PFOA  
 C9PFNA = 13C9 PFNA  
 C3PFHS = 13C3 PFHxS  
 C8PFOS = 13C8 PFOS  
 C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110275-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-332558/1-A**  
**Matrix: Water**  
**Analysis Batch: 332927**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 332558**

| Analyte                              | MB     | MB        | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |     |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 05:46 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 119       |           | 31 - 182 | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| 13C8 PFOA        | 116       |           | 48 - 162 | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| 13C9 PFNA        | 125       |           | 51 - 167 | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| 13C3 PFHxS       | 115       |           | 28 - 188 | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| 13C8 PFOS        | 121       |           | 51 - 159 | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| 13C6 PFDA        | 115       |           | 49 - 163 | 01/04/23 15:27 | 01/06/23 05:46 | 1       |

**Lab Sample ID: LCS 410-332558/2-A**  
**Matrix: Water**  
**Analysis Batch: 332927**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 332558**

| Analyte                              | Spike Added | LCS    | LCS       | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|
|                                      |             | Result | Qualifier |      |   |      |             |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 22.2   |           | ng/L |   | 87   | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 21.1   |           | ng/L |   | 83   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 22.0   |           | ng/L |   | 86   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.3   |           | ng/L |   | 82   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 19.1   |           | ng/L |   | 81   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 21.8   |           | ng/L |   | 85   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 125       |           | 31 - 182 |
| 13C8 PFOA        | 124       |           | 48 - 162 |
| 13C9 PFNA        | 130       |           | 51 - 167 |
| 13C3 PFHxS       | 124       |           | 28 - 188 |
| 13C8 PFOS        | 128       |           | 51 - 159 |
| 13C6 PFDA        | 122       |           | 49 - 163 |

**Lab Sample ID: LCSD 410-332558/3-A**  
**Matrix: Water**  
**Analysis Batch: 332927**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 332558**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD   |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-------|
|                                      |             |             |                |      |   |      |             |     | Limit |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 22.1        |                | ng/L |   | 86   | 59 - 145    | 0   | 30    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 20.7        |                | ng/L |   | 81   | 51 - 145    | 2   | 30    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 21.6        |                | ng/L |   | 84   | 61 - 139    | 2   | 30    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.0        |                | ng/L |   | 81   | 58 - 134    | 1   | 30    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 19.2        |                | ng/L |   | 81   | 45 - 150    | 0   | 30    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 21.5        |                | ng/L |   | 84   | 56 - 138    | 2   | 30    |

Eurofins Lancaster Laboratories Environment Testing, LLC

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110275-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 117              |                  | 31 - 182      |
| 13C8 PFOA               | 117              |                  | 48 - 162      |
| 13C9 PFNA               | 127              |                  | 51 - 167      |
| 13C3 PFHxS              | 122              |                  | 28 - 188      |
| 13C8 PFOS               | 127              |                  | 51 - 159      |
| 13C6 PFDA               | 124              |                  | 49 - 163      |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110275-1

## LCMS

### Prep Batch: 332558

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-110275-1        | 52-12_POET_Pre_20221221  | Total/NA  | Water  | 537 IDA |            |
| 410-110275-2        | 52-12_POET_Mid_20221221  | Total/NA  | Water  | 537 IDA |            |
| 410-110275-3        | 52-12_POET_Post_20221221 | Total/NA  | Water  | 537 IDA |            |
| MB 410-332558/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA |            |
| LCS 410-332558/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-332558/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 332927

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-110275-1        | 52-12_POET_Pre_20221221  | Total/NA  | Water  | 537 IDA | 332558     |
| 410-110275-2        | 52-12_POET_Mid_20221221  | Total/NA  | Water  | 537 IDA | 332558     |
| 410-110275-3        | 52-12_POET_Post_20221221 | Total/NA  | Water  | 537 IDA | 332558     |
| MB 410-332558/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA | 332558     |
| LCS 410-332558/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA | 332558     |
| LCSD 410-332558/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA | 332558     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110275-1

**Client Sample ID: 52-12\_POET\_Pre\_20221221**

**Lab Sample ID: 410-110275-1**

Date Collected: 12/21/22 14:40

Matrix: Water

Date Received: 12/22/22 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332558       | JU9U    | ELLE | 01/04/23 15:27       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 332927       | PY4D    | ELLE | 01/06/23 09:39       |

**Client Sample ID: 52-12\_POET\_Mid\_20221221**

**Lab Sample ID: 410-110275-2**

Date Collected: 12/21/22 14:42

Matrix: Water

Date Received: 12/22/22 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332558       | JU9U    | ELLE | 01/04/23 15:27       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 332927       | PY4D    | ELLE | 01/06/23 09:50       |

**Client Sample ID: 52-12\_POET\_Post\_20221221**

**Lab Sample ID: 410-110275-3**

Date Collected: 12/21/22 14:44

Matrix: Water

Date Received: 12/22/22 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332558       | JU9U    | ELLE | 01/04/23 15:27       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 332927       | PY4D    | ELLE | 01/06/23 10:01       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110275-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110275-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300





# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110275-1

---

| Lab Sample ID | Client Sample ID         | Matrix | Collected      | Received       |
|---------------|--------------------------|--------|----------------|----------------|
| 410-110275-1  | 52-12_POET_Pre_20221221  | Water  | 12/21/22 14:40 | 12/22/22 11:00 |
| 410-110275-2  | 52-12_POET_Mid_20221221  | Water  | 12/21/22 14:42 | 12/22/22 11:00 |
| 410-110275-3  | 52-12_POET_Post_20221221 | Water  | 12/21/22 14:44 | 12/22/22 11:00 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-110275-1

Login Number: 110275

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Reiff, Nicole L

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |



## ANALYTICAL REPORT

|                 |  |
|-----------------|--|
| Lab Number:     | L2259154   |
| Client:         | Sanborn, Head & Associates, Inc.<br>20 Foundry Street<br>Concord, NH 03301 |
| ATTN:           | Andrew Buchy   |
| Phone:          | (603) 229-1900   |
| Project Name:   | N.MONMOUTH PFAS  |
| Project Number: | 5197.01  |
| Report Date:    | 11/28/22   |

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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

---

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



**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259154  
**Report Date:** 11/28/22

| <b>Alpha<br/>Sample ID</b> | <b>Client ID</b>         | <b>Matrix</b> | <b>Sample<br/>Location</b> | <b>Collection<br/>Date/Time</b> | <b>Receive Date</b> |
|----------------------------|--------------------------|---------------|----------------------------|---------------------------------|---------------------|
| L2259154-01                | 52-77_POET_PRE_20221021  | WATER         | N.MONMOUTH, ME             | 10/21/22 12:03                  | 10/21/22            |
| L2259154-02                | 52-77_POET_MID_20221021  | WATER         | N.MONMOUTH, ME             | 10/21/22 12:05                  | 10/21/22            |
| L2259154-03                | 52-77_POET_POST_20221021 | WATER         | N.MONMOUTH, ME             | 10/21/22 12:07                  | 10/21/22            |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259154  
**Report Date:** 11/28/22

### 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259154  
**Report Date:** 11/28/22

**Case Narrative (continued)**

Perfluorinated Alkyl Acids by Isotope Dilution

L2259154-01, -02, and -03: Sample results for Perfluorohexanesulfonic Acid (PFHxS), Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) are reported as the sum of the branched and linear isomers.

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* Darian Dailey

Title: Technical Director/Representative

Date: 11/28/22

# ORGANICS



# SEMIVOLATILES

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259154  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

Lab ID: L2259154-01  
 Client ID: 52-77\_POET\_PRE\_20221021  
 Sample Location: N.MONMOUTH, ME

Date Collected: 10/21/22 12:03  
 Date Received: 10/21/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/25/22 02:17  
 Analyst: SG

Extraction Method: ALPHA 23528  
 Extraction Date: 11/02/22 15:10

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | 2.09   |           | ng/l  | 1.72 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | 2.94   |           | ng/l  | 1.72 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | 19.0   |           | ng/l  | 1.72 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.72 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 48.3   |           | ng/l  | 1.72 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.72 | --  | 1               |
| PFAS, Total (6)   | 72.3   |           | ng/l  | 1.72 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 85         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 123        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 89         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 85         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 102        |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 95         |           | 62-124              |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259154  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

Lab ID: L2259154-02  
 Client ID: 52-77\_POET\_MID\_20221021  
 Sample Location: N.MONMOUTH, ME

Date Collected: 10/21/22 12:05  
 Date Received: 10/21/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/25/22 02:34  
 Analyst: SG

Extraction Method: ALPHA 23528  
 Extraction Date: 11/02/22 15:10

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.74 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.74 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.74 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.74 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 43.9   |           | ng/l  | 1.74 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.74 | --  | 1               |
| PFAS, Total (6)   | 43.9   |           | ng/l  | 1.74 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 104        |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 128        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 103        |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 100        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 105        |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 105        |           | 62-124              |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259154  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

**Lab ID:** L2259154-03  
**Client ID:** 52-77\_POET\_POST\_20221021  
**Sample Location:** N.MONMOUTH, ME

**Date Collected:** 10/21/22 12:07  
**Date Received:** 10/21/22  
**Field Prep:** Not Specified

**Sample Depth:**

**Matrix:** Water  
**Analytical Method:** 134,LCMSMS-ID  
**Analytical Date:** 11/25/22 02:51  
**Analyst:** SG

**Extraction Method:** ALPHA 23528  
**Extraction Date:** 11/02/22 15:10

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.72 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.72 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.72 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.72 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | ND     |           | ng/l  | 1.72 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.72 | --  | 1               |
| PFAS, Total (6)   | ND     |           | ng/l  | 1.72 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 97         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 119        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 97         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 101        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 102        |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 97         |           | 62-124              |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259154  
**Report Date:** 11/28/22

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 11/03/22 16:37  
Analyst: AC

Extraction Method: ALPHA 23528  
Extraction Date: 11/02/22 15:10

| <b>Parameter</b>   | <b>Result</b> | <b>Qualifier</b> | <b>Units</b> | <b>RL</b> | <b>MDL</b> |
|--|---------------|------------------|--------------|-----------|------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1707298-1 |               |                  |              |           |            |
| Perfluoroheptanoic Acid (PFHpA)  | ND            |                  | ng/l         | 2.00      | --         |
| Perfluorohexanesulfonic Acid (PFHxS)   | ND            |                  | ng/l         | 2.00      | --         |
| Perfluorooctanoic Acid (PFOA)  | ND            |                  | ng/l         | 2.00      | --         |
| Perfluorononanoic Acid (PFNA)  | ND            |                  | ng/l         | 2.00      | --         |
| Perfluorooctanesulfonic Acid (PFOS)  | ND            |                  | ng/l         | 2.00      | --         |
| Perfluorodecanoic Acid (PFDA)  | ND            |                  | ng/l         | 2.00      | --         |
| PFAS, Total (6)  | ND            |                  | ng/l         | 2.00      | --         |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259154  
**Report Date:** 11/28/22

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 11/03/22 16:37  
Analyst: AC

Extraction Method: ALPHA 23528  
Extraction Date: 11/02/22 15:10

| Parameter  | Result | Qualifier | Units | RL | MDL |
|--|--------|-----------|-------|----|-----|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1707298-1 |        |           |       |    |     |

| Surrogate (Extracted Internal Standard)  | %Recovery | Qualifier | Acceptance Criteria |
|--|-----------|-----------|---------------------|
| Perfluoro[13C4]Butanoic Acid (MPFBA)   | 106       |           | 58-132              |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)  | 109       |           | 62-163              |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)  | 116       |           | 70-131              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 90        |           | 12-142              |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 107       |           | 57-129              |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 104       |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 115       |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)  | 113       |           | 62-129              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 87        |           | 14-147              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)  | 107       |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)  | 109       |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 106       |           | 62-124              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 104       |           | 10-162              |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | 70        |           | 24-116              |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | 101       |           | 55-137              |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)  | 51        |           | 5-112               |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 63        |           | 27-126              |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 90        |           | 48-131              |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | 94        |           | 22-136              |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 96        |           | 10-165              |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 58        |           | 10-206              |

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** N.MONMOUTH PFAS

**Project Number:** 5197.01

**Lab Number:** L2259154

**Report Date:** 11/28/22

| <b>Parameter</b>  | <b>LCS<br/>%Recovery</b> | <b>Qual</b> | <b>LCSD<br/>%Recovery</b> | <b>Qual</b> | <b>%Recovery<br/>Limits</b> | <b>RPD</b> | <b>Qual</b> | <b>RPD<br/>Limits</b> |
|---|--------------------------|-------------|---------------------------|-------------|-----------------------------|------------|-------------|-----------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1707298-2 |                          |             |                           |             |                             |            |             |                       |
| Perfluoroheptanoic Acid (PFHpA)   | 97                       |             | -                         |             | 58-159                      | -          |             | 30                    |
| Perfluorohexanesulfonic Acid (PFHxS)  | 107                      |             | -                         |             | 69-177                      | -          |             | 30                    |
| Perfluorooctanoic Acid (PFOA)   | 90                       |             | -                         |             | 63-159                      | -          |             | 30                    |
| Perfluorononanoic Acid (PFNA)   | 93                       |             | -                         |             | 68-171                      | -          |             | 30                    |
| Perfluorooctanesulfonic Acid (PFOS)   | 104                      |             | -                         |             | 52-151                      | -          |             | 30                    |
| Perfluorodecanoic Acid (PFDA)   | 99                       |             | -                         |             | 63-171                      | -          |             | 30                    |

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: N.MONMOUTH PFAS

Lab Number: L2259154

Project Number: 5197.01

Report Date: 11/28/22

| Parameter   | LCS       |      | LCSD      |      | %Recovery |      | RPD | RPD    |  |
|---|-----------|------|-----------|------|-----------|------|-----|--------|--|
|   | %Recovery | Qual | %Recovery | Qual | Limits    | Qual |     | Limits |  |
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1707298-2 |           |      |           |      |           |      |     |        |  |

| Surrogate (Extracted Internal Standard)  | LCS       |      | LCSD      |      | Acceptance<br>Criteria |
|--|-----------|------|-----------|------|------------------------|
|  | %Recovery | Qual | %Recovery | Qual |                        |
| Perfluoro[13C4]Butanoic Acid (MPFBA)   | 108       |      |           |      | 58-132                 |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)  | 109       |      |           |      | 62-163                 |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)  | 120       |      |           |      | 70-131                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 98        |      |           |      | 12-142                 |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 108       |      |           |      | 57-129                 |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 107       |      |           |      | 60-129                 |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 118       |      |           |      | 71-134                 |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)  | 117       |      |           |      | 62-129                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 94        |      |           |      | 14-147                 |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)  | 109       |      |           |      | 59-139                 |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)  | 113       |      |           |      | 69-131                 |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 104       |      |           |      | 62-124                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 115       |      |           |      | 10-162                 |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | 73        |      |           |      | 24-116                 |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | 98        |      |           |      | 55-137                 |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)  | 49        |      |           |      | 5-112                  |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 64        |      |           |      | 27-126                 |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 93        |      |           |      | 48-131                 |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | 95        |      |           |      | 22-136                 |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 97        |      |           |      | 10-165                 |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 57        |      |           |      | 10-206                 |



## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** N.MONMOUTH PFAS

**Lab Number:** L2259154

**Project Number:** 5197.01

**Report Date:** 11/28/22

| <i>Parameter</i>  | <i>Native Sample</i> | <i>MS Added</i> | <i>MS Found</i> | <i>MS %Recovery</i> | <i>Qual</i> | <i>MSD Found</i> | <i>MSD %Recovery</i> | <i>Qual</i> | <i>Recovery Limits</i> | <i>RPD</i> | <i>Qual</i> | <i>RPD Limits</i> |
|---|----------------------|-----------------|-----------------|---------------------|-------------|------------------|----------------------|-------------|------------------------|------------|-------------|-------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1707298-3 QC Sample: L2258790-01 Client ID: MS Sample |                      |                 |                 |                     |             |                  |                      |             |                        |            |             |                   |
| Perfluorobutanesulfonic Acid (PFBS)   | 15.0                 | 35.1            | 48.3            | 95                  |             | -                | -                    |             | 65-157                 | -          |             | 30                |
| 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)   | ND                   | 37              | 40.7            | 110                 |             | -                | -                    |             | 37-219                 | -          |             | 30                |
| Perfluorohexanoic Acid (PFHxA)  | 81.3                 | 39.5            | 119             | 96                  |             | -                | -                    |             | 69-168                 | -          |             | 30                |
| Perfluoropentanesulfonic Acid (PFPeS)   | 22.7                 | 37.2            | 64.4            | 112                 |             | -                | -                    |             | 52-156                 | -          |             | 30                |
| Perfluoroheptanoic Acid (PFHpA)   | 32.9                 | 39.5            | 71.7            | 98                  |             | -                | -                    |             | 58-159                 | -          |             | 30                |
| Perfluorohexanesulfonic Acid (PFHxS)  | 205                  | 36.1            | 248             | 119                 |             | -                | -                    |             | 69-177                 | -          |             | 30                |
| Perfluorooctanoic Acid (PFOA)   | 18.4                 | 39.5            | 54.3            | 91                  |             | -                | -                    |             | 63-159                 | -          |             | 30                |
| Perfluorononanoic Acid (PFNA)   | 4.32                 | 39.5            | 42.1            | 96                  |             | -                | -                    |             | 68-171                 | -          |             | 30                |
| Perfluorooctanesulfonic Acid (PFOS)   | 358                  | 36.6            | 412             | 147                 |             | -                | -                    |             | 52-151                 | -          |             | 30                |
| Perfluorodecanoic Acid (PFDA)   | ND                   | 39.5            | 37.9            | 95                  |             | -                | -                    |             | 63-171                 | -          |             | 30                |
| N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)   | ND                   | 39.5            | 35.5            | 90                  |             | -                | -                    |             | 60-166                 | -          |             | 30                |
| Perfluoroundecanoic Acid (PFUnA)  | ND                   | 39.5            | 47.0            | 119                 |             | -                | -                    |             | 60-153                 | -          |             | 30                |
| N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)  | ND                   | 39.5            | 41.8            | 106                 |             | -                | -                    |             | 45-170                 | -          |             | 30                |
| Perfluorododecanoic Acid (PFDoA)  | ND                   | 39.5            | 38.5            | 98                  |             | -                | -                    |             | 67-153                 | -          |             | 30                |
| Perfluorotridecanoic Acid (PFTrDA)  | ND                   | 39.5            | 39.2            | 99                  |             | -                | -                    |             | 48-158                 | -          |             | 30                |
| Perfluorotetradecanoic Acid (PFTA)  | ND                   | 39.5            | 41.5            | 105                 |             | -                | -                    |             | 59-182                 | -          |             | 30                |

| <i>Surrogate (Extracted Internal Standard)</i>                         | <i>MS % Recovery</i> | <i>Qualifier</i> | <i>MSD % Recovery</i> | <i>Qualifier</i> | <i>Acceptance Criteria</i> |
|--|----------------------|------------------|-----------------------|------------------|----------------------------|
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)         | 149                  | Q                |                       |                  | 12-142                     |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)  | 43                   |                  |                       |                  | 27-126                     |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA) | 52                   |                  |                       |                  | 24-116                     |

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** N.MONMOUTH PFAS

**Lab Number:** L2259154

**Project Number:** 5197.01

**Report Date:** 11/28/22

| <i>Parameter</i>  | <i>Native Sample</i> | <i>MS Added</i> | <i>MS Found</i> | <i>MS %Recovery</i> | <i>Qual</i> | <i>MSD Found</i> | <i>MSD %Recovery</i> | <i>Qual</i> | <i>Recovery Limits</i> | <i>RPD</i> | <i>Qual</i> | <i>RPD Limits</i> |
|---|----------------------|-----------------|-----------------|---------------------|-------------|------------------|----------------------|-------------|------------------------|------------|-------------|-------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1707298-3 QC Sample: L2258790-01 Client ID: MS Sample |                      |                 |                 |                     |             |                  |                      |             |                        |            |             |                   |

| <i>Surrogate (Extracted Internal Standard)</i>          | <i>MS</i>         |                  | <i>MSD</i>        |                  | <i>Acceptance Criteria</i> |
|---|-------------------|------------------|-------------------|------------------|----------------------------|
|   | <i>% Recovery</i> | <i>Qualifier</i> | <i>% Recovery</i> | <i>Qualifier</i> |                            |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA) | 84                |                  |                   |                  | 55-137                     |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)       | 94                |                  |                   |                  | 62-124                     |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)        | 87                |                  |                   |                  | 57-129                     |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)         | 79                |                  |                   |                  | 60-129                     |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)      | 99                |                  |                   |                  | 71-134                     |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)             | 70                |                  |                   |                  | 48-131                     |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)        | 74                |                  |                   |                  | 22-136                     |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)             | 107               |                  |                   |                  | 69-131                     |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)                   | 108               |                  |                   |                  | 62-129                     |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)                   | 94                |                  |                   |                  | 59-139                     |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)       | 112               |                  |                   |                  | 70-131                     |

**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259154  
**Report Date:** 11/28/22

| Parameter  | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|--|---------------|------------------|-------|-----|------|------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1707298-4 QC Sample: L2258790-02 Client ID: DUP Sample |               |                  |       |     |      |            |
| Perfluorobutanesulfonic Acid (PFBS)  | 2600E         | 2610E            | ng/l  | 0   |      | 30         |
| 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorohexanoic Acid (PFHxA)   | 8800E         | 8750E            | ng/l  | 1   |      | 30         |
| Perfluoropentanesulfonic Acid (PFPeS)  | 2160E         | 2120E            | ng/l  | 2   |      | 30         |
| Perfluoroheptanoic Acid (PFHpA)  | 5220E         | 5110E            | ng/l  | 2   |      | 30         |
| Perfluorohexanesulfonic Acid (PFHxS)   | 6970E         | 6770E            | ng/l  | 3   |      | 30         |
| Perfluorooctanoic Acid (PFOA)  | 2190E         | 2250E            | ng/l  | 3   |      | 30         |
| Perfluorononanoic Acid (PFNA)  | 110           | 106              | ng/l  | 4   |      | 30         |
| Perfluorooctanesulfonic Acid (PFOS)  | 2370E         | 2190E            | ng/l  | 8   |      | 30         |
| Perfluorodecanoic Acid (PFDA)  | ND            | ND               | ng/l  | NC  |      | 30         |
| N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluoroundecanoic Acid (PFUnA)   | ND            | ND               | ng/l  | NC  |      | 30         |
| N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)   | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorododecanoic Acid (PFDoA)   | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorotridecanoic Acid (PFTrDA)   | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorotetradecanoic Acid (PFTA)   | ND            | ND               | ng/l  | NC  |      | 30         |

| Surrogate (Extracted Internal Standard)                        | %Recovery | Qualifier | %Recovery | Qualifier | Acceptance Criteria |
|--|-----------|-----------|-----------|-----------|---------------------|
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)              | 82        |           | 83        |           | 70-131              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS) | 146       | Q         | 152       | Q         | 12-142              |



## Lab Duplicate Analysis

### Batch Quality Control

Project Name: N.MONMOUTH PFAS

Project Number: 5197.01

Lab Number: L2259154

Report Date: 11/28/22

| Parameter  | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|--|---------------|------------------|-------|-----|------|------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1707298-4 QC Sample: L2258790-02 Client ID: DUP Sample |               |                  |       |     |      |            |

| Surrogate (Extracted Internal Standard)                                | %Recovery | Qualifier | %Recovery | Qualifier | Acceptance Criteria |
|--|-----------|-----------|-----------|-----------|---------------------|
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)                       | 49        | Q         | 49        | Q         | 57-129              |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)                        | 67        |           | 69        |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                     | 72        |           | 74        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)                                  | 104       |           | 101       |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)                                  | 96        |           | 95        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)                            | 101       |           | 108       |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)                      | 94        |           | 100       |           | 62-124              |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA) | 44        |           | 51        |           | 24-116              |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                | 90        |           | 92        |           | 55-137              |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)  | 49        |           | 55        |           | 27-126              |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)                            | 71        |           | 83        |           | 48-131              |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)                       | 84        |           | 88        |           | 22-136              |

**Project Name:** N.MONMOUTH PFAS**Lab Number:** L2259154**Project Number:** 5197.01**Report Date:** 11/28/22**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

**Cooler Information**

| <b>Cooler</b> | <b>Custody Seal</b> |
|---------------|---------------------|
| A             | Absent              |

**Container Information**

| <b>Container ID</b> | <b>Container Type</b>          | <b>Cooler</b> | <b>Initial pH</b> | <b>Final pH</b> | <b>Temp deg C</b> | <b>Pres</b> | <b>Seal</b> | <b>Frozen Date/Time</b> | <b>Analysis(*)</b>       |
|---------------------|--------------------------------|---------------|-------------------|-----------------|-------------------|-------------|-------------|-------------------------|--------------------------|
| L2259154-01A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259154-01B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259154-02A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259154-02B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259154-03A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259154-03B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11282213:02  
**Lab Number:** L2259154  
**Report Date:** 11/28/22

### PFAS PARAMETER SUMMARY

| Parameter   | Acronym      | CAS Number  |
|---|--------------|-------------|
| <b>PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)</b>                          |              |             |
| 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    |
| <b>PERFLUOROALKYL SULFONIC ACIDS (PFSAs)</b>                            |              |             |
| 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    |
| <b>FLUOROTELOMERS</b>   |              |             |
| 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 |
| <b>PERFLUOROALKANE SULFONAMIDES (FASAs)</b>                             |              |             |
| Perfluorooctanesulfonamide  | FOSA/PFOSA   | 754-91-6    |
| N-Ethyl Perfluorooctane Sulfonamide                                     | NEtFOSA      | 4151-50-2   |
| N-Methyl Perfluorooctane Sulfonamide                                    | NMeFOSA      | 31506-32-8  |
| <b>PERFLUOROALKANE SULFONYL SUBSTANCES</b>                              |              |             |
| 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   |
| <b>PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS</b>                  |              |             |
| 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 |
| <b>CHLORO-PERFLUOROALKYL SULFONIC ACIDS</b>                             |              |             |
| 11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid                      | 11Cl-PF3OUdS | 763051-92-9 |
| 9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid                        | 9Cl-PF3ONS   | 756426-58-1 |
| <b>PERFLUOROETHER SULFONIC ACIDS (PFESAs)</b>                           |              |             |
| Perfluoro(2-Ethoxyethane)Sulfonic Acid                                  | PFEESA       | 113507-82-7 |
| <b>PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)</b>               |              |             |
| 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11282213:02  
**Lab Number:** L2259154  
**Report Date:** 11/28/22

### 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259154  
**Report Date:** 11/28/22

## 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.)<br><br>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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259154  
**Report Date:** 11/28/22

### 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259154  
**Report Date:** 11/28/22

**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.)

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259154  
**Report Date:** 11/28/22

## REFERENCES

- 134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

## LIMITATION OF LIABILITIES

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

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



## 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, NO<sub>2</sub>, NO<sub>3</sub>.

### 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, SM4500CI-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, **LCHAT 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.

**CHAIN OF CUSTODY**

PAGE 1 OF 1

Date Rec'd in Lab: 10/22/22

ALPHA Job # L2259154



Westborough, MA    Mansfield, MA  
 TEL: 508-898-9220    TEL: 508-822-9300  
 FAX: 508-898-9193    FAX: 508-822-3266

**Project Information**  
**Project Name:** N. Monmouth PFAS  
**Project Location:** N. Monmouth, ME  
**Project #:** 5197.01  
**Project Manager:** Andrew Buchy  
**ALPHA Quote #:** 403080

**Report Information / Data Deliverables**  
 FAX     EMAIL  
 ADEX     Add'l Deliverables

**Billing Information**  
 Same as Client Info  
 PO #: 5197.01

**Client Information**

**Client:** Sanborn Head & Associates  
**Address:** 20 Foundry Street, Concord, NH  
**Phone:** 603-229-1900  
**Fax:**  
**Email:** [swhitney@sanbornhead.com](mailto:swhitney@sanbornhead.com)  
[abuchy@sanbornhead.com](mailto:abuchy@sanbornhead.com)

**Turn-Around Time**  
 Standard  
 Rush (Only if Pre-Approved)

Due Date:

These samples have been previously analyzed by Alpha

**Other Project Specific Requirements/Comments/Detection Limits:**

Level II Data Package, EQuIS 4-File format, SHA Standard flat file  
 MEDEP v.6 text EDD

**Regulatory Requirements/Report Limits**  
 State/Fed Program

Criteria

**ANALYSIS**

| ALPHA Lab ID<br>(Lab Use Only) | Sample ID                | Collection |       | Sample Matrix | Sampler's<br>Initials | PFAS 537.1 Mod with Isotope Dilution (6<br>compounds) |                          |  |  |  |  |  |  |  |  |  | TOTAL # BOTTLES |  |  |  |  |   |   |
|--------------------------------|--------------------------|------------|-------|---------------|-----------------------|---|--------------------------|--|--|--|--|--|--|--|--|--|-----------------|--|--|--|--|---|---|
|                                |                          | Date       | Time  |               |                       |   | Sample Specific Comments |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |   |   |
| 59154-01                       | 52-77_POET_Pre_20221021  | 10/21/22   | 12:03 | GW            | DK                    | X   |                          |  |  |  |  |  |  |  |  |  |                 |  |  |  |  | 2 |   |
| -02                            | 52-77_POET_Mid_20221021  | ↓          | 12:05 | GW            | DK                    | X   |                          |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |   | 2 |
| -03                            | 52-77_POET_Post_20221021 | ↓          | 12:07 | GW            | DK                    | X   |                          |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |   | 2 |
|                                |                          |            |       |               |                       |   |                          |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |   |   |
|                                |                          |            |       |               |                       |   |                          |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |   |   |
|                                |                          |            |       |               |                       |   |                          |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |   |   |
|                                |                          |            |       |               |                       |   |                          |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |   |   |
|                                |                          |            |       |               |                       |   |                          |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |   |   |
|                                |                          |            |       |               |                       |   |                          |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |   |   |
|                                |                          |            |       |               |                       |   |                          |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |   |   |
|                                |                          |            |       |               |                       |   |                          |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |   |   |
|                                |                          |            |       |               |                       |   |                          |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |   |   |

**SAMPLING HANDLING**  
**Filtration**  
 Done  
 Not Needed  
 Lab to do Preservation  
 Lab to do  
 (please specify below)

Container Type: P  
 Preservative: O

Relinquished By: [Signature] Date/Time: 10/21/22 15:00  
 Received By: [Signature] Date/Time: 10/21/22 15:00  
[Signature] 17:40 10/21/22 [Signature] 17:40  
[Signature] AAL 10/21/22 20:00 [Signature] 10/21/22 20:00  
[Signature] 10/22/22 08:00 [Signature] 10/22/22 06:00  
[Signature] 10/22/22 07:20 [Signature] 10/22/22 07:20

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 1/9/2023 6:12:26 AM

**JOB DESCRIPTION**

N Monmouth PFAS

**JOB NUMBER**

410-110274-1

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
1/9/2023 6:12:26 AM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---





# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 10 |
| QC Sample Results . . . . .        | 11 |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 16 |
| Sample Summary . . . . .           | 17 |
| Chain of Custody . . . . .         | 18 |
| Receipt Checklists . . . . .       | 19 |

# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110274-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description                                     |
|-----------|---|
| I         | Value is EMPC (estimated maximum possible concentration). |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110274-1

---

**Job ID: 410-110274-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative  
410-110274-1**

**Receipt**

The samples were received on 12/22/2022 11:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.5°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110274-1

## Client Sample ID: 52-47\_POET\_Pre\_20221221

Lab Sample ID: 410-110274-1

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 5.6    |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 47     |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 4.1    |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 12     | I         | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-47\_POET\_Mid\_20221221

Lab Sample ID: 410-110274-2

| Analyte                             | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 3.0    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-47\_POET\_Post\_20221221

Lab Sample ID: 410-110274-3

No Detections.

## Client Sample ID: FB-01\_20221221

Lab Sample ID: 410-110274-4

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110274-1

**Client Sample ID: 52-47\_POET\_Pre\_20221221**

**Lab Sample ID: 410-110274-1**

Date Collected: 12/21/22 10:27

Matrix: Water

Date Received: 12/22/22 11:00

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 5.6       |           | 1.6      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 08:55 | 1       |
| Perfluorooctanoic acid (PFOA)        | 47        |           | 1.6      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 08:55 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 08:55 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 4.1       |           | 1.6      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 08:55 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 12        | I         | 1.6      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 08:55 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 08:55 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 128       |           | 31 - 182 |     |      |   | 01/04/23 15:27 | 01/06/23 08:55 | 1       |
| 13C8 PFOA                            | 119       |           | 48 - 162 |     |      |   | 01/04/23 15:27 | 01/06/23 08:55 | 1       |
| 13C9 PFNA                            | 121       |           | 51 - 167 |     |      |   | 01/04/23 15:27 | 01/06/23 08:55 | 1       |
| 13C3 PFHxS                           | 139       |           | 28 - 188 |     |      |   | 01/04/23 15:27 | 01/06/23 08:55 | 1       |
| 13C8 PFOS                            | 125       |           | 51 - 159 |     |      |   | 01/04/23 15:27 | 01/06/23 08:55 | 1       |
| 13C6 PFDA                            | 118       |           | 49 - 163 |     |      |   | 01/04/23 15:27 | 01/06/23 08:55 | 1       |

**Client Sample ID: 52-47\_POET\_Mid\_20221221**

**Lab Sample ID: 410-110274-2**

Date Collected: 12/21/22 10:29

Matrix: Water

Date Received: 12/22/22 11:00

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7      |           | 1.7      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:06 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:06 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:06 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7      |           | 1.7      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:06 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 3.0       |           | 1.7      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:06 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:06 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 121       |           | 31 - 182 |     |      |   | 01/04/23 15:27 | 01/06/23 09:06 | 1       |
| 13C8 PFOA                            | 118       |           | 48 - 162 |     |      |   | 01/04/23 15:27 | 01/06/23 09:06 | 1       |
| 13C9 PFNA                            | 126       |           | 51 - 167 |     |      |   | 01/04/23 15:27 | 01/06/23 09:06 | 1       |
| 13C3 PFHxS                           | 125       |           | 28 - 188 |     |      |   | 01/04/23 15:27 | 01/06/23 09:06 | 1       |
| 13C8 PFOS                            | 126       |           | 51 - 159 |     |      |   | 01/04/23 15:27 | 01/06/23 09:06 | 1       |
| 13C6 PFDA                            | 112       |           | 49 - 163 |     |      |   | 01/04/23 15:27 | 01/06/23 09:06 | 1       |

**Client Sample ID: 52-47\_POET\_Post\_20221221**

**Lab Sample ID: 410-110274-3**

Date Collected: 12/21/22 10:31

Matrix: Water

Date Received: 12/22/22 11:00

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.8   |           | 1.8 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:17 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.8   |           | 1.8 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:17 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.8   |           | 1.8 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:17 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.8   |           | 1.8 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:17 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.8   |           | 1.8 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:17 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.8   |           | 1.8 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 09:17 | 1       |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110274-1

**Client Sample ID: 52-47\_POET\_Post\_20221221**

**Lab Sample ID: 410-110274-3**

Date Collected: 12/21/22 10:31

Matrix: Water

Date Received: 12/22/22 11:00

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C4 PFHpA              | 133              |                  | 31 - 182      | 01/04/23 15:27  | 01/06/23 09:17  | 1              |
| 13C8 PFOA               | 131              |                  | 48 - 162      | 01/04/23 15:27  | 01/06/23 09:17  | 1              |
| 13C9 PFNA               | 138              |                  | 51 - 167      | 01/04/23 15:27  | 01/06/23 09:17  | 1              |
| 13C3 PFHxS              | 136              |                  | 28 - 188      | 01/04/23 15:27  | 01/06/23 09:17  | 1              |
| 13C8 PFOS               | 136              |                  | 51 - 159      | 01/04/23 15:27  | 01/06/23 09:17  | 1              |
| 13C6 PFDA               | 120              |                  | 49 - 163      | 01/04/23 15:27  | 01/06/23 09:17  | 1              |

**Client Sample ID: FB-01\_20221221**

**Lab Sample ID: 410-110274-4**

Date Collected: 12/21/22 10:15

Matrix: Water

Date Received: 12/22/22 11:00

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| <i>Analyte</i>                       | <i>Result</i> | <i>Qualifier</i> | <i>RL</i> | <i>MDL</i> | <i>Unit</i> | <i>D</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|--------------------------------------|---------------|------------------|-----------|------------|-------------|----------|-----------------|-----------------|----------------|
| Perfluoroheptanoic acid (PFHpA)      | <1.6          |                  | 1.6       |            | ng/L        |          | 01/04/23 15:27  | 01/06/23 09:28  | 1              |
| Perfluorooctanoic acid (PFOA)        | <1.6          |                  | 1.6       |            | ng/L        |          | 01/04/23 15:27  | 01/06/23 09:28  | 1              |
| Perfluorononanoic acid (PFNA)        | <1.6          |                  | 1.6       |            | ng/L        |          | 01/04/23 15:27  | 01/06/23 09:28  | 1              |
| Perfluorohexanesulfonic acid (PFHxS) | <1.6          |                  | 1.6       |            | ng/L        |          | 01/04/23 15:27  | 01/06/23 09:28  | 1              |
| Perfluorooctanesulfonic acid (PFOS)  | <1.6          |                  | 1.6       |            | ng/L        |          | 01/04/23 15:27  | 01/06/23 09:28  | 1              |
| Perfluorodecanoic acid (PFDA)        | <1.6          |                  | 1.6       |            | ng/L        |          | 01/04/23 15:27  | 01/06/23 09:28  | 1              |

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C4 PFHpA              | 124              |                  | 31 - 182      | 01/04/23 15:27  | 01/06/23 09:28  | 1              |
| 13C8 PFOA               | 119              |                  | 48 - 162      | 01/04/23 15:27  | 01/06/23 09:28  | 1              |
| 13C9 PFNA               | 128              |                  | 51 - 167      | 01/04/23 15:27  | 01/06/23 09:28  | 1              |
| 13C3 PFHxS              | 125              |                  | 28 - 188      | 01/04/23 15:27  | 01/06/23 09:28  | 1              |
| 13C8 PFOS               | 129              |                  | 51 - 159      | 01/04/23 15:27  | 01/06/23 09:28  | 1              |
| 13C6 PFDA               | 119              |                  | 49 - 163      | 01/04/23 15:27  | 01/06/23 09:28  | 1              |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110274-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID       | Client Sample ID         | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|---------------------|--------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                     |                          | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-110274-1        | 52-47_POET_Pre_20221221  | 128   | 119                | 121                | 139                | 125                | 118                |
| 410-110274-2        | 52-47_POET_Mid_20221221  | 121   | 118                | 126                | 125                | 126                | 112                |
| 410-110274-3        | 52-47_POET_Post_20221221 | 133   | 131                | 138                | 136                | 136                | 120                |
| 410-110274-4        | FB-01_20221221           | 124   | 119                | 128                | 125                | 129                | 119                |
| LCS 410-332558/2-A  | Lab Control Sample       | 125   | 124                | 130                | 124                | 128                | 122                |
| LCSD 410-332558/3-A | Lab Control Sample Dup   | 117   | 117                | 127                | 122                | 127                | 124                |
| MB 410-332558/1-A   | Method Blank             | 119   | 116                | 125                | 115                | 121                | 115                |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110274-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-332558/1-A**  
**Matrix: Water**  
**Analysis Batch: 332927**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 332558**

| Analyte                              | MB     | MB        | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |     |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:27 | 01/06/23 05:46 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 119       |           | 31 - 182 | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| 13C8 PFOA        | 116       |           | 48 - 162 | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| 13C9 PFNA        | 125       |           | 51 - 167 | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| 13C3 PFHxS       | 115       |           | 28 - 188 | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| 13C8 PFOS        | 121       |           | 51 - 159 | 01/04/23 15:27 | 01/06/23 05:46 | 1       |
| 13C6 PFDA        | 115       |           | 49 - 163 | 01/04/23 15:27 | 01/06/23 05:46 | 1       |

**Lab Sample ID: LCS 410-332558/2-A**  
**Matrix: Water**  
**Analysis Batch: 332927**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 332558**

| Analyte                              | Spike Added | LCS    | LCS       | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|
|                                      |             | Result | Qualifier |      |   |      |             |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 22.2   |           | ng/L |   | 87   | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 21.1   |           | ng/L |   | 83   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 22.0   |           | ng/L |   | 86   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.3   |           | ng/L |   | 82   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 19.1   |           | ng/L |   | 81   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 21.8   |           | ng/L |   | 85   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 125       |           | 31 - 182 |
| 13C8 PFOA        | 124       |           | 48 - 162 |
| 13C9 PFNA        | 130       |           | 51 - 167 |
| 13C3 PFHxS       | 124       |           | 28 - 188 |
| 13C8 PFOS        | 128       |           | 51 - 159 |
| 13C6 PFDA        | 122       |           | 49 - 163 |

**Lab Sample ID: LCSD 410-332558/3-A**  
**Matrix: Water**  
**Analysis Batch: 332927**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 332558**

| Analyte                              | Spike Added | LCSD   | LCSD      | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|-----|-----------|
|                                      |             | Result | Qualifier |      |   |      |             |     |           |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 22.1   |           | ng/L |   | 86   | 59 - 145    | 0   | 30        |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 20.7   |           | ng/L |   | 81   | 51 - 145    | 2   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 21.6   |           | ng/L |   | 84   | 61 - 139    | 2   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.0   |           | ng/L |   | 81   | 58 - 134    | 1   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 19.2   |           | ng/L |   | 81   | 45 - 150    | 0   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 21.5   |           | ng/L |   | 84   | 56 - 138    | 2   | 30        |

Eurofins Lancaster Laboratories Environment Testing, LLC



# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110274-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 117              |                  | 31 - 182      |
| 13C8 PFOA               | 117              |                  | 48 - 162      |
| 13C9 PFNA               | 127              |                  | 51 - 167      |
| 13C3 PFHxS              | 122              |                  | 28 - 188      |
| 13C8 PFOS               | 127              |                  | 51 - 159      |
| 13C6 PFDA               | 124              |                  | 49 - 163      |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110274-1

## LCMS

### Prep Batch: 332558

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-110274-1        | 52-47_POET_Pre_20221221  | Total/NA  | Water  | 537 IDA |            |
| 410-110274-2        | 52-47_POET_Mid_20221221  | Total/NA  | Water  | 537 IDA |            |
| 410-110274-3        | 52-47_POET_Post_20221221 | Total/NA  | Water  | 537 IDA |            |
| 410-110274-4        | FB-01_20221221           | Total/NA  | Water  | 537 IDA |            |
| MB 410-332558/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA |            |
| LCS 410-332558/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-332558/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 332927

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-110274-1        | 52-47_POET_Pre_20221221  | Total/NA  | Water  | 537 IDA | 332558     |
| 410-110274-2        | 52-47_POET_Mid_20221221  | Total/NA  | Water  | 537 IDA | 332558     |
| 410-110274-3        | 52-47_POET_Post_20221221 | Total/NA  | Water  | 537 IDA | 332558     |
| 410-110274-4        | FB-01_20221221           | Total/NA  | Water  | 537 IDA | 332558     |
| MB 410-332558/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA | 332558     |
| LCS 410-332558/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA | 332558     |
| LCSD 410-332558/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA | 332558     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110274-1

**Client Sample ID: 52-47\_POET\_Pre\_20221221**

**Lab Sample ID: 410-110274-1**

Date Collected: 12/21/22 10:27

Matrix: Water

Date Received: 12/22/22 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332558       | JU9U          | ELLE | 01/04/23 15:27       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 332927       | PY4D          | ELLE | 01/06/23 08:55       |

**Client Sample ID: 52-47\_POET\_Mid\_20221221**

**Lab Sample ID: 410-110274-2**

Date Collected: 12/21/22 10:29

Matrix: Water

Date Received: 12/22/22 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332558       | JU9U          | ELLE | 01/04/23 15:27       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 332927       | PY4D          | ELLE | 01/06/23 09:06       |

**Client Sample ID: 52-47\_POET\_Post\_20221221**

**Lab Sample ID: 410-110274-3**

Date Collected: 12/21/22 10:31

Matrix: Water

Date Received: 12/22/22 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332558       | JU9U          | ELLE | 01/04/23 15:27       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 332927       | PY4D          | ELLE | 01/06/23 09:17       |

**Client Sample ID: FB-01\_20221221**

**Lab Sample ID: 410-110274-4**

Date Collected: 12/21/22 10:15

Matrix: Water

Date Received: 12/22/22 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332558       | JU9U          | ELLE | 01/04/23 15:27       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 332927       | PY4D          | ELLE | 01/06/23 09:28       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110274-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110274-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110274-1

| Lab Sample ID | Client Sample ID         | Matrix | Collected      | Received       |
|---------------|--------------------------|--------|----------------|----------------|
| 410-110274-1  | 52-47_POET_Pre_20221221  | Water  | 12/21/22 10:27 | 12/22/22 11:00 |
| 410-110274-2  | 52-47_POET_Mid_20221221  | Water  | 12/21/22 10:29 | 12/22/22 11:00 |
| 410-110274-3  | 52-47_POET_Post_20221221 | Water  | 12/21/22 10:31 | 12/22/22 11:00 |
| 410-110274-4  | FB-01_20221221           | Water  | 12/21/22 10:15 | 12/22/22 11:00 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



410-110274 Chain of Custody

ories

# Environmental Analysis Request/Chain of Custody

Acct # \_\_\_\_\_ Group # \_\_\_\_\_ Sample # \_\_\_\_\_

|  |                                     |  |  |                                      |  |                                      |   |  |                                 |  |           |      |  |                           |  |
|--|-------------------------------------|--|--|--------------------------------------|--|--------------------------------------|---|--|---------------------------------|--|-----------|------|--|---------------------------|--|
| Client: <b>Sanborn Head &amp; Associates</b>   |                                     |  |  | <b>Matrix</b>                        |  |                                      | <b>Analyses Requested</b>   |  |                                 |  |           |      | <b>For Lab Use Only</b>  |                           |  |
| Project Name/#: N. Monmouth PFAS 5197.01   |                                     | Site ID #:   |  | <input type="checkbox"/> Tissue      | <input checked="" type="checkbox"/> Ground | <input type="checkbox"/> Surface     | <b>Preservation and Filtration Codes</b>  |  |                                 |  |           |      | SF #: _____  |                           |  |
| Project Manager: Andrew Buchy  |                                     | P.O. #: 5197.01  |  | <input type="checkbox"/> Potable     | <input type="checkbox"/> NPDES             | <input type="checkbox"/> Field Blank |   |  |                                 |  |           |      | SCR #: _____   |                           |  |
| Sampler: Don Kelsey  |                                     | PWSID #:   |  | <input type="checkbox"/> Sediment    | <input type="checkbox"/> Water             | <input type="checkbox"/> Other:      |   |  |                                 |  |           |      | <b>Preservation Codes</b><br>H = HCl                      T = Thiosulfate<br>N = HNO <sub>3</sub> B = NaOH<br>S = H <sub>2</sub> SO <sub>4</sub> P = H <sub>3</sub> PO <sub>4</sub><br>F = Field Filtered        O = Other |                           |  |
| Phone #: 603-229-1900  |                                     | Quote #:   |  | <input type="checkbox"/> Soil        |  |                                      |   |  |                                 |  |           |      | <b>Remarks</b>   |                           |  |
| State where samples were collected: ME   |                                     | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/> |  |                                      |  |                                      |   |  |                                 |  |           |      |  |                           |  |
| <b>Sample Identification</b>   |                                     | <b>Collection</b>  |  | <input type="checkbox"/> Composite   |  |                                      |   |  |                                 |  |           |      |  |                           |  |
|  |                                     | Date   | Time   | Grab                                 |  |                                      | Total # of Containers   | PFAS 537 Mod with isotope dilution (6 compounds) |                                 |  |           |      |  |                           |  |
| 52-47_POET_Pre_20221221  |                                     | 12/21/2022   | 10:27  | X                                    |  | X                                    | 2   | X  |                                 |  |           |      |  | Report to RL (no J-flags) |  |
| 52-47_POET_Mid_20221221  |                                     | 12/21/2022   | 10:29  | X                                    |  | X                                    | 2   | X  |                                 |  |           |      |  | Report to RL (no J-flags) |  |
| 52-47_POET_Post_20221221   |                                     | 12/21/2022   | 10:31  | X                                    |  | X                                    | 2   | X  |                                 |  |           |      |  | Report to RL (no J-flags) |  |
| FB-01_20221221   |                                     | 12/21/2022   | 10:15  | X                                    |  |                                      | 2   | X  |                                 |  |           |      |  | Report to RL (no J-flags) |  |
| Turnaround Time Requested (TAT) (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |                                     |  |  | Relinquished by: <i>[Signature]</i>  |  |                                      | Date  | Time   | Received by:                    |  | Date      | Time |  |                           |  |
| (Rush TAT is subject to laboratory approval and surcharges)  |                                     |  |  |                                      |  |                                      | 12/4/2023   | 15:45  |                                 |  |           |      |  |                           |  |
| Date results are needed:   |                                     |  |  | Relinquished by:                     |  |                                      | Date  | Time   | Received by:                    |  | Date      | Time |  |                           |  |
| Rush results requested by (please check): E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>                   |                                     |  |  |                                      |  |                                      |   |  |                                 |  |           |      |  |                           |  |
| E-mail Address:  |                                     |  |  | Relinquished by:                     |  |                                      | Date  | Time   | Received by:                    |  | Date      | Time |  |                           |  |
| Phone:   |                                     |  |  |                                      |  |                                      |   |  |                                 |  |           |      |  |                           |  |
| <b>Data Package Options</b> (please check if required)   |                                     |  |  | Relinquished by:                     |  |                                      | Date  | Time   | Received by:                    |  | Date      | Time |  |                           |  |
| Level I  | <input type="checkbox"/>            | MA MCP   | <input type="checkbox"/>                                 |                                      |  |                                      |   |  |                                 |  |           |      |  |                           |  |
| Level II   | <input checked="" type="checkbox"/> | CT RCP   | <input type="checkbox"/>                                 |                                      |  |                                      |   |  |                                 |  |           |      |  |                           |  |
| Level VI   | <input type="checkbox"/>            | TX TRRP-13   | <input type="checkbox"/>                                 |                                      |  |                                      |   |  |                                 |  |           |      |  |                           |  |
| NJ DKQP  | <input type="checkbox"/>            | NYSDEC Category  | <input type="checkbox"/> A or <input type="checkbox"/> B | Relinquished by Commercial Carrier:  |  |                                      |   |  | Received by: <i>[Signature]</i> |  | Date      | Time |  |                           |  |
| EQUS 4-file format/SHA   |                                     |  |  |                                      |  |                                      |   |  |                                 |  | 12/4/2023 | 1100 |  |                           |  |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |                                     |  |  | If yes, format: Standard (flat file) |  |                                      | UPS <input type="checkbox"/> FedEx <input checked="" type="checkbox"/> Other <input type="checkbox"/> |  | Temperature upon receipt        |  | 4.5 °C    |      |  |                           |  |



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-110274-1

Login Number: 110274

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Reiff, Nicole L

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |





## ANALYTICAL REPORT

|                 |  |
|-----------------|--|
| Lab Number:     | L2258484   |
| Client:         | Sanborn, Head & Associates, Inc.<br>20 Foundry Street<br>Concord, NH 03301 |
| ATTN:           | Andrew Buchy   |
| Phone:          | (603) 229-1900   |
| Project Name:   | N. MONMOUTH PFAS   |
| Project Number: | 5197.01  |
| Report Date:    | 11/28/22   |

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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

---

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



**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258484  
**Report Date:** 11/28/22

| <b>Alpha<br/>Sample ID</b> | <b>Client ID</b>                     | <b>Matrix</b> | <b>Sample<br/>Location</b> | <b>Collection<br/>Date/Time</b> | <b>Receive Date</b> |
|----------------------------|--------------------------------------|---------------|----------------------------|---------------------------------|---------------------|
| L2258484-01                | 52-49_POET_PRE_20221019              | WATER         | N. MONMOUTH, ME            | 10/19/22 10:32                  | 10/20/22            |
| L2258484-02                | 52-49_POET_MID_20221019              | WATER         | N. MONMOUTH, ME            | 10/19/22 10:35                  | 10/20/22            |
| L2258484-03                | 52-49_POET_POST_20221019             | WATER         | N. MONMOUTH, ME            | 10/19/22 10:40                  | 10/20/22            |
| L2258484-04                | 52-<br>49_POET_POST_20221019_D<br>UP | WATER         | N. MONMOUTH, ME            | 10/19/22 10:40                  | 10/20/22            |
| L2258484-05                | FB-01_20221019                       | WATER         | N. MONMOUTH, ME            | 10/19/22 10:15                  | 10/20/22            |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258484  
**Report Date:** 11/28/22

### 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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258484  
**Report Date:** 11/28/22

**Case Narrative (continued)**

Perfluorinated Alkyl Acids by Isotope Dilution

L2258484-01, -02, -03, -04, -05, WG1706775-3, and WG1706775-4: Sample results for

Perfluorohexanesulfonic Acid (PFHxS), Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) are reported as the sum of the branched and linear isomers.

WG1706775-1 and WG1706775-2: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

The WG1706775-4 Laboratory Duplicate RPD for perfluorooctanesulfonic acid (pfos) (134%), performed on L2258484-02, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

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

Authorized Signature:

*Darian Dailey* Darian Dailey

Title: Technical Director/Representative

Date: 11/28/22

# ORGANICS

# SEMIVOLATILES

**Project Name:** N. MONMOUTH PFAS**Lab Number:** L2258484**Project Number:** 5197.01**Report Date:** 11/28/22**SAMPLE RESULTS**

Lab ID: L2258484-01  
 Client ID: 52-49\_POET\_PRE\_20221019  
 Sample Location: N. MONMOUTH, ME

Date Collected: 10/19/22 10:32  
 Date Received: 10/20/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/07/22 18:27  
 Analyst: RS

Extraction Method: ALPHA 23528  
 Extraction Date: 11/01/22 17:45

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | 3.38   |           | ng/l  | 1.73 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | 5.14   |           | ng/l  | 1.73 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | 29.1   |           | ng/l  | 1.73 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.73 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 11.5   |           | ng/l  | 1.73 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.73 | --  | 1               |
| PFAS, Total (6)   | 49.1   |           | ng/l  | 1.73 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 91         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 128        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 115        |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 103        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 110        |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 108        |           | 62-124              |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258484  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

Lab ID: L2258484-02  
 Client ID: 52-49\_POET\_MID\_20221019  
 Sample Location: N. MONMOUTH, ME

Date Collected: 10/19/22 10:35  
 Date Received: 10/20/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/07/22 19:00  
 Analyst: RS

Extraction Method: ALPHA 23528  
 Extraction Date: 11/01/22 17:45

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.72 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.72 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.72 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.72 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 20.7   |           | ng/l  | 1.72 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.72 | --  | 1               |
| PFAS, Total (6)   | 20.7   |           | ng/l  | 1.72 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 89         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 123        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 114        |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 98         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 107        |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 113        |           | 62-124              |



**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258484  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

Lab ID: L2258484-03  
 Client ID: 52-49\_POET\_POST\_20221019  
 Sample Location: N. MONMOUTH, ME

Date Collected: 10/19/22 10:40  
 Date Received: 10/20/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/23/22 21:00  
 Analyst: AC

Extraction Method: ALPHA 23528  
 Extraction Date: 11/01/22 17:45

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.79 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.79 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.79 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.79 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | ND     |           | ng/l  | 1.79 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.79 | --  | 1               |
| PFAS, Total (6)   | ND     |           | ng/l  | 1.79 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 74         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 93         |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 93         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 88         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 91         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 80         |           | 62-124              |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258484  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

Lab ID: L2258484-04  
 Client ID: 52-49\_POET\_POST\_20221019\_DUP  
 Sample Location: N. MONMOUTH, ME

Date Collected: 10/19/22 10:40  
 Date Received: 10/20/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/23/22 21:16  
 Analyst: AC

Extraction Method: ALPHA 23528  
 Extraction Date: 11/01/22 17:45

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.80 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.80 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.80 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.80 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | ND     |           | ng/l  | 1.80 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.80 | --  | 1               |
| PFAS, Total (6)   | ND     |           | ng/l  | 1.80 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 84         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 99         |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 102        |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 94         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 92         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 94         |           | 62-124              |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258484  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

**Lab ID:** L2258484-05  
**Client ID:** FB-01\_20221019  
**Sample Location:** N. MONMOUTH, ME

**Date Collected:** 10/19/22 10:15  
**Date Received:** 10/20/22  
**Field Prep:** Not Specified

**Sample Depth:**

**Matrix:** Water  
**Analytical Method:** 134,LCMSMS-ID  
**Analytical Date:** 11/23/22 21:33  
**Analyst:** AC

**Extraction Method:** ALPHA 23528  
**Extraction Date:** 11/01/22 17:45

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.87 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.87 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.87 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.87 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | ND     |           | ng/l  | 1.87 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.87 | --  | 1               |
| PFAS, Total (6)   | ND     |           | ng/l  | 1.87 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 76         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 95         |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 98         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 94         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 92         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 91         |           | 62-124              |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258484  
**Report Date:** 11/28/22

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 11/07/22 17:38  
Analyst: RS

Extraction Method: ALPHA 23528  
Extraction Date: 11/01/22 17:45

| Parameter  | Result | Qualifier | Units | RL   | MDL |
|--|--------|-----------|-------|------|-----|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-05 Batch: WG1706775-1 |        |           |       |      |     |
| Perfluoroheptanoic Acid (PFHpA)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorohexanesulfonic Acid (PFHxS)   | ND     |           | ng/l  | 2.00 | --  |
| Perfluorooctanoic Acid (PFOA)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorononanoic Acid (PFNA)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorooctanesulfonic Acid (PFOS)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorodecanoic Acid (PFDA)  | ND     |           | ng/l  | 2.00 | --  |
| PFAS, Total (6)  | ND     |           | ng/l  | 2.00 | --  |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258484  
**Report Date:** 11/28/22

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 11/07/22 17:38  
Analyst: RS

Extraction Method: ALPHA 23528  
Extraction Date: 11/01/22 17:45

| Parameter  | Result | Qualifier | Units | RL | MDL |
|--|--------|-----------|-------|----|-----|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-05 Batch: WG1706775-1 |        |           |       |    |     |

| Surrogate (Extracted Internal Standard)  | %Recovery  | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[13C4]Butanoic Acid (MPFBA)   | 115        |           | 58-132              |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)  | 137        |           | 62-163              |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)  | 114        |           | 70-131              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 98         |           | 12-142              |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 98         |           | 57-129              |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 98         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 128        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)  | 122        |           | 62-129              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 143        |           | 14-147              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)  | 113        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)  | 115        |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 122        |           | 62-124              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 152        |           | 10-162              |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | <b>117</b> | Q         | 24-116              |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | <b>146</b> | Q         | 55-137              |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)  | 50         |           | 5-112               |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 103        |           | 27-126              |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 126        |           | 48-131              |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | <b>151</b> | Q         | 22-136              |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 119        |           | 10-165              |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 174        |           | 10-206              |

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** N. MONMOUTH PFAS

**Lab Number:** L2258484

**Project Number:** 5197.01

**Report Date:** 11/28/22

| <b>Parameter</b>  | <b>LCS<br/>%Recovery</b> | <b>Qual</b> | <b>LCSD<br/>%Recovery</b> | <b>Qual</b> | <b>%Recovery<br/>Limits</b> | <b>RPD</b> | <b>Qual</b> | <b>RPD<br/>Limits</b> |
|---|--------------------------|-------------|---------------------------|-------------|-----------------------------|------------|-------------|-----------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 Batch: WG1706775-2 |                          |             |                           |             |                             |            |             |                       |
| Perfluoroheptanoic Acid (PFHpA)   | 97                       |             | -                         |             | 58-159                      | -          |             | 30                    |
| Perfluorohexanesulfonic Acid (PFHxS)  | 109                      |             | -                         |             | 69-177                      | -          |             | 30                    |
| Perfluorooctanoic Acid (PFOA)   | 87                       |             | -                         |             | 63-159                      | -          |             | 30                    |
| Perfluorononanoic Acid (PFNA)   | 101                      |             | -                         |             | 68-171                      | -          |             | 30                    |
| Perfluorooctanesulfonic Acid (PFOS)   | 112                      |             | -                         |             | 52-151                      | -          |             | 30                    |
| Perfluorodecanoic Acid (PFDA)   | 107                      |             | -                         |             | 63-171                      | -          |             | 30                    |

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: N. MONMOUTH PFAS

Lab Number: L2258484

Project Number: 5197.01

Report Date: 11/28/22

| Parameter   | LCS       |      | LCSD      |      | %Recovery |      | RPD | RPD    |  |
|---|-----------|------|-----------|------|-----------|------|-----|--------|--|
|   | %Recovery | Qual | %Recovery | Qual | Limits    | Qual |     | Limits |  |
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 Batch: WG1706775-2 |           |      |           |      |           |      |     |        |  |

| Surrogate (Extracted Internal Standard)  | LCS       |      | LCSD      |      | Acceptance Criteria |
|--|-----------|------|-----------|------|---------------------|
|  | %Recovery | Qual | %Recovery | Qual |                     |
| Perfluoro[13C4]Butanoic Acid (MPFBA)   | 109       |      |           |      | 58-132              |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)  | 127       |      |           |      | 62-163              |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)  | 107       |      |           |      | 70-131              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 98        |      |           |      | 12-142              |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 98        |      |           |      | 57-129              |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 98        |      |           |      | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 123       |      |           |      | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)  | 119       |      |           |      | 62-129              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 139       |      |           |      | 14-147              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)  | 106       |      |           |      | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)  | 113       |      |           |      | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 114       |      |           |      | 62-124              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 146       |      |           |      | 10-162              |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | 112       |      |           |      | 24-116              |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | 132       |      |           |      | 55-137              |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)  | 35        |      |           |      | 5-112               |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 103       |      |           |      | 27-126              |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 120       |      |           |      | 48-131              |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | 147       | Q    |           |      | 22-136              |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 106       |      |           |      | 10-165              |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 166       |      |           |      | 10-206              |

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** N. MONMOUTH PFAS

**Project Number:** 5197.01

**Lab Number:** L2258484

**Report Date:** 11/28/22

| <i>Parameter</i>  | <i>Native Sample</i> | <i>MS Added</i> | <i>MS Found</i> | <i>MS %Recovery</i> | <i>Qual</i> | <i>MSD Found</i> | <i>MSD %Recovery</i> | <i>Qual</i> | <i>Recovery Limits</i> | <i>RPD</i> | <i>Qual</i> | <i>RPD Limits</i> |
|---|----------------------|-----------------|-----------------|---------------------|-------------|------------------|----------------------|-------------|------------------------|------------|-------------|-------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1706775-3 QC Sample: L2258484-01 Client ID: 52-49_POET_PRE_20221019 |                      |                 |                 |                     |             |                  |                      |             |                        |            |             |                   |
| Perfluoroheptanoic Acid (PFHpA)   | 3.38                 | 36              | 40.6            | 103                 |             | -                | -                    |             | 58-159                 | -          |             | 30                |
| Perfluorohexanesulfonic Acid (PFHxS)  | 5.14                 | 32.9            | 41.9            | 112                 |             | -                | -                    |             | 69-177                 | -          |             | 30                |
| Perfluorooctanoic Acid (PFOA)   | 29.1                 | 36              | 62.2            | 92                  |             | -                | -                    |             | 63-159                 | -          |             | 30                |
| Perfluorononanoic Acid (PFNA)   | ND                   | 36              | 38.3            | 106                 |             | -                | -                    |             | 68-171                 | -          |             | 30                |
| Perfluorooctanesulfonic Acid (PFOS)   | 11.5                 | 33.4            | 43.5            | 96                  |             | -                | -                    |             | 52-151                 | -          |             | 30                |
| Perfluorodecanoic Acid (PFDA)   | ND                   | 36              | 36.6            | 102                 |             | -                | -                    |             | 63-171                 | -          |             | 30                |

| <i>Surrogate (Extracted Internal Standard)</i>     | <i>MS % Recovery</i> | <i>Qualifier</i> | <i>MSD % Recovery</i> | <i>Qualifier</i> | <i>Acceptance Criteria</i> |
|--|----------------------|------------------|-----------------------|------------------|----------------------------|
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 113                  |                  |                       |                  | 62-124                     |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 95                   |                  |                       |                  | 60-129                     |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 122                  |                  |                       |                  | 71-134                     |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 110                  |                  |                       |                  | 69-131                     |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 120                  |                  |                       |                  | 62-129                     |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 106                  |                  |                       |                  | 59-139                     |



## Lab Duplicate Analysis

Batch Quality Control

Project Name: N. MONMOUTH PFAS

Project Number: 5197.01

Lab Number: L2258484

Report Date: 11/28/22

| Parameter   | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---------------|------------------|-------|-----|------|------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1706775-4 QC Sample: L2258484-02 Client ID: 52-49_POET_MID_20221019 |               |                  |       |     |      |            |
| Perfluoroheptanoic Acid (PFHpA)   | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorohexanesulfonic Acid (PFHxS)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorooctanoic Acid (PFOA)   | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorononanoic Acid (PFNA)   | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorooctanesulfonic Acid (PFOS)   | 20.7          | 105              | ng/l  | 134 | Q    | 30         |
| Perfluorodecanoic Acid (PFDA)   | ND            | ND               | ng/l  | NC  |      | 30         |

| Surrogate (Extracted Internal Standard)            | %Recovery | Qualifier | %Recovery | Qualifier | Acceptance Criteria |
|--|-----------|-----------|-----------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 89        |           | 87        |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 123       |           | 125       |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 114       |           | 112       |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 98        |           | 95        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 107       |           | 101       |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 113       |           | 108       |           | 62-124              |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11282213:04  
**Lab Number:** L2258484  
**Report Date:** 11/28/22

**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

**Cooler Information**

**Cooler**                      **Custody Seal**  
A                                      Absent

**Container Information**

| <b>Container ID</b> | <b>Container Type</b>          | <b>Cooler</b> | <b>Initial pH</b> | <b>Final pH</b> | <b>Temp deg C</b> | <b>Pres</b> | <b>Seal</b> | <b>Frozen Date/Time</b> | <b>Analysis(*)</b>       |
|---------------------|--------------------------------|---------------|-------------------|-----------------|-------------------|-------------|-------------|-------------------------|--------------------------|
| L2258484-01A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258484-01B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258484-02A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258484-02B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258484-03A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258484-03B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258484-04A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258484-04B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258484-05A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |

\*Values in parentheses indicate holding time in days



**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11282213:04  
**Lab Number:** L2258484  
**Report Date:** 11/28/22

### PFAS PARAMETER SUMMARY

| Parameter   | Acronym      | CAS Number  |
|---|--------------|-------------|
| <b>PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)</b>                          |              |             |
| 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    |
| <b>PERFLUOROALKYL SULFONIC ACIDS (PFSAs)</b>                            |              |             |
| 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    |
| <b>FLUOROTELOMERS</b>   |              |             |
| 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 |
| <b>PERFLUOROALKANE SULFONAMIDES (FASAs)</b>                             |              |             |
| Perfluorooctanesulfonamide  | FOSA/PFOSA   | 754-91-6    |
| N-Ethyl Perfluorooctane Sulfonamide                                     | NEtFOSA      | 4151-50-2   |
| N-Methyl Perfluorooctane Sulfonamide                                    | NMeFOSA      | 31506-32-8  |
| <b>PERFLUOROALKANE SULFONYL SUBSTANCES</b>                              |              |             |
| 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   |
| <b>PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS</b>                  |              |             |
| 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 |
| <b>CHLORO-PERFLUOROALKYL SULFONIC ACIDS</b>                             |              |             |
| 11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid                      | 11Cl-PF3OUdS | 763051-92-9 |
| 9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid                        | 9Cl-PF3ONS   | 756426-58-1 |
| <b>PERFLUOROETHER SULFONIC ACIDS (PFESAs)</b>                           |              |             |
| Perfluoro(2-Ethoxyethane)Sulfonic Acid                                  | PFEEASA      | 113507-82-7 |
| <b>PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)</b>               |              |             |
| 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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11282213:04  
**Lab Number:** L2258484  
**Report Date:** 11/28/22

### 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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258484  
**Report Date:** 11/28/22

## 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.)<br><br>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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258484  
**Report Date:** 11/28/22

### 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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258484  
**Report Date:** 11/28/22

#### **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.)

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258484  
**Report Date:** 11/28/22

## REFERENCES

- 134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

## LIMITATION OF LIABILITIES

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

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





## 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, NO<sub>2</sub>, NO<sub>3</sub>.

### 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, SM4500CI-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, **LCHAT 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.

10/19/22

L2258484

**CHAIN OF CUSTODY**

PAGE 1 OF 1

Date Rec'd in Lab:

ALPHA Job #



Westborough, MA    Mansfield, MA  
 TEL: 508-898-9220    TEL: 508-822-9300  
 FAX: 508-898-9193    FAX: 508-822-3288

**Project Information**

**Project Name:** N. Monmouth PFAS  
**Project Location:** N. Monmouth, ME  
**Project #:** 5197.01  
**Project Manager:** Andrew Buchy  
**ALPHA Quote #:** 403080

**Report Information / Data Deliverables**

FAX     EMAIL  
 ADEX     Add'l Deliverables

**Billing Information**

Same as Client Info  
 PO #: 5197.01

**Regulatory Requirements/Report Limits**

State/Fed Program

Criteria

**Client Information**

**Client:** Sanborn Head & Associates  
**Address:** 20 Foundry Street, Concord, NH  
**Phone:** 603-229-1900  
**Fax:**  
**Email:** [swhitney@sanbornhead.com](mailto:swhitney@sanbornhead.com)  
[abuchy@sanbornhead.com](mailto:abuchy@sanbornhead.com)

**Turn-Around Time**

Standard  
 Rush (Only if Pre-Approved)

Due Date:

These samples have been previously analyzed by Alpha

**Other Project Specific Requirements/Comments/Detection Limits:**

Level II Data Package, EQUIS 4-File format, SHA Standard flat file  
 MEDEP v.6 text EDD

**ANALYSIS**

| ALPHA Lab ID<br>(Lab Use Only) | Sample ID                    | Collection |       | Sample Matrix | Sampler's<br>Initials | PFAS 537.1 Mod with Isotope Dilution (6<br>compounds) | SAMPLING HANDLING |      |            |                        | TOTAL # BOTTLES |                                     |
|--------------------------------|------------------------------|------------|-------|---------------|-----------------------|---|-------------------|------|------------|------------------------|-----------------|-------------------------------------|
|                                |                              | Date       | Time  |               |                       |   | Filtration        | Done | Not Needed | Lab to do Preservation |                 | Lab to do<br>(please specify below) |
| -01                            | 52-49_POET_Pre_20221019      | 10/19/22   | 10:32 | GW            | DK                    | X   |                   |      |            |                        |                 |                                     |
| -02                            | 52-49_POET_Mid_20221019      |            | 10:35 | GW            | DK                    | X   |                   |      |            |                        |                 |                                     |
| -03                            | 52-49_POET_Post_20221019     |            | 10:40 | GW            | DK                    | X   |                   |      |            |                        |                 |                                     |
| -04                            | 52-49_POET_Post_20221019_DUP |            | 10:40 | GW            | DK                    | X   |                   |      |            |                        |                 |                                     |
| -05                            | FB-01_20221019               |            | 10:15 | FB            | DK                    | X   |                   |      |            |                        |                 |                                     |

|                    |                |                    |                |
|--------------------|----------------|--------------------|----------------|
| Container Type     | P              |                    |                |
| Preservative       | O              |                    |                |
| Relinquished By:   | Date/Time      | Received By:       | Date/Time      |
| <i>[Signature]</i> | 10/19/22 17:15 | <i>[Signature]</i> | 10/19/22 17:05 |
| <i>[Signature]</i> | 10/19/22 19:20 | <i>[Signature]</i> | 10/19/22 19:20 |
| <i>[Signature]</i> | 10/19/22 19:30 | <i>[Signature]</i> | 10/19/22 19:30 |

*[Signature]* - AGL 10/19/22 20:45

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-98357-1

Client Project/Site: N Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



*Authorized for release by:*

*10/5/2022 2:57:41 AM*

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Handwritten signature of Kelly Bauer in black ink.

---

Kelly Bauer  
Project Manager  
10/5/2022 2:57:41 AM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 9  |
| QC Sample Results . . . . .        | 10 |
| QC Association Summary . . . . .   | 12 |
| Lab Chronicle . . . . .            | 13 |
| Certification Summary . . . . .    | 14 |
| Method Summary . . . . .           | 15 |
| Sample Summary . . . . .           | 16 |
| Chain of Custody . . . . .         | 17 |
| Receipt Checklists . . . . .       | 18 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98357-1

### Qualifiers

#### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| I         | Value is EMPC (estimated maximum possible concentration).  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98357-1

---

**Job ID: 410-98357-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative**  
**410-98357-1**

**Receipt**

The samples were received on 9/17/2022 10:24 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.1°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98357-1

## Client Sample ID: 52-50\_POET\_Pre\_20220915

Lab Sample ID: 410-98357-1

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 4.3    |           | 1.7 | 0.41 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 33     |           | 1.7 | 0.41 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 4.2    |           | 1.7 | 0.41 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 3.0    | I         | 1.7 | 0.83 | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-50\_POET\_Mid\_20220915

Lab Sample ID: 410-98357-2

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 1.1    | J         | 1.6 | 0.82 | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-50\_POET\_Post\_20220915

Lab Sample ID: 410-98357-3

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 1.2    | J         | 1.7 | 0.84 | ng/L | 1       |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC



# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98357-1

**Client Sample ID: 52-50\_POET\_Pre\_20220915**

**Lab Sample ID: 410-98357-1**

Date Collected: 09/15/22 13:17

Matrix: Water

Date Received: 09/17/22 10:24

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 4.3       |           | 1.7      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:01 | 1       |
| Perfluorooctanoic acid (PFOA)        | 33        |           | 1.7      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:01 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.7      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:01 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 4.2       |           | 1.7      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:01 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 3.0       | I         | 1.7      | 0.83 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:01 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.7      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:01 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 103       |           | 31 - 182 |      |      |   | 09/27/22 11:37 | 10/01/22 06:01 | 1       |
| 13C8 PFOA                            | 99        |           | 48 - 162 |      |      |   | 09/27/22 11:37 | 10/01/22 06:01 | 1       |
| 13C9 PFNA                            | 114       |           | 51 - 167 |      |      |   | 09/27/22 11:37 | 10/01/22 06:01 | 1       |
| 13C3 PFHxS                           | 99        |           | 28 - 188 |      |      |   | 09/27/22 11:37 | 10/01/22 06:01 | 1       |
| 13C8 PFOS                            | 107       |           | 51 - 159 |      |      |   | 09/27/22 11:37 | 10/01/22 06:01 | 1       |
| 13C6 PFDA                            | 102       |           | 49 - 163 |      |      |   | 09/27/22 11:37 | 10/01/22 06:01 | 1       |

**Client Sample ID: 52-50\_POET\_Mid\_20220915**

**Lab Sample ID: 410-98357-2**

Date Collected: 09/15/22 13:20

Matrix: Water

Date Received: 09/17/22 10:24

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND        |           | 1.6      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:12 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:12 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:12 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |           | 1.6      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:12 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 1.1       | J         | 1.6      | 0.82 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:12 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:12 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 111       |           | 31 - 182 |      |      |   | 09/27/22 11:37 | 10/01/22 06:12 | 1       |
| 13C8 PFOA                            | 109       |           | 48 - 162 |      |      |   | 09/27/22 11:37 | 10/01/22 06:12 | 1       |
| 13C9 PFNA                            | 124       |           | 51 - 167 |      |      |   | 09/27/22 11:37 | 10/01/22 06:12 | 1       |
| 13C3 PFHxS                           | 105       |           | 28 - 188 |      |      |   | 09/27/22 11:37 | 10/01/22 06:12 | 1       |
| 13C8 PFOS                            | 114       |           | 51 - 159 |      |      |   | 09/27/22 11:37 | 10/01/22 06:12 | 1       |
| 13C6 PFDA                            | 106       |           | 49 - 163 |      |      |   | 09/27/22 11:37 | 10/01/22 06:12 | 1       |

**Client Sample ID: 52-50\_POET\_Post\_20220915**

**Lab Sample ID: 410-98357-3**

Date Collected: 09/15/22 13:23

Matrix: Water

Date Received: 09/17/22 10:24

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND        |           | 1.7      | 0.42 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:23 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND        |           | 1.7      | 0.42 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:23 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.7      | 0.42 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:23 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |           | 1.7      | 0.42 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:23 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 1.2       | J         | 1.7      | 0.84 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:23 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.7      | 0.42 | ng/L |   | 09/27/22 11:37 | 10/01/22 06:23 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 110       |           | 31 - 182 |      |      |   | 09/27/22 11:37 | 10/01/22 06:23 | 1       |
| 13C8 PFOA                            | 111       |           | 48 - 162 |      |      |   | 09/27/22 11:37 | 10/01/22 06:23 | 1       |
| 13C9 PFNA                            | 123       |           | 51 - 167 |      |      |   | 09/27/22 11:37 | 10/01/22 06:23 | 1       |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98357-1

Client Sample ID: 52-50\_POET\_Post\_20220915

Lab Sample ID: 410-98357-3

Date Collected: 09/15/22 13:23

Matrix: Water

Date Received: 09/17/22 10:24

## Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C3 PFHxS              | 106              |                  | 28 - 188      | 09/27/22 11:37  | 10/01/22 06:23  | 1              |
| 13C8 PFOS               | 113              |                  | 51 - 159      | 09/27/22 11:37  | 10/01/22 06:23  | 1              |
| 13C6 PFDA               | 105              |                  | 49 - 163      | 09/27/22 11:37  | 10/01/22 06:23  | 1              |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98357-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID         | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|--------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                          | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-98357-1        | 52-50_POET_Pre_20220915  | 103   | 99                 | 114                | 99                 | 107                | 102                |
| 410-98357-2        | 52-50_POET_Mid_20220915  | 111   | 109                | 124                | 105                | 114                | 106                |
| 410-98357-3        | 52-50_POET_Post_20220915 | 110   | 111                | 123                | 106                | 113                | 105                |
| LCS 410-300284/2-A | Lab Control Sample       | 99  | 97                 | 115                | 95                 | 115                | 99                 |
| LCS 410-300284/3-A | Lab Control Sample Dup   | 101   | 101                | 109                | 104                | 113                | 105                |
| MB 410-300284/1-A  | Method Blank             | 99  | 97                 | 113                | 100                | 107                | 100                |

### Surrogate Legend

C4PFHA = 13C4 PFHpA  
 C8PFOA = 13C8 PFOA  
 C9PFNA = 13C9 PFNA  
 C3PFHS = 13C3 PFHxS  
 C8PFOS = 13C8 PFOS  
 C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98357-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-300284/1-A**  
**Matrix: Water**  
**Analysis Batch: 301853**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 300284**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 1.0  | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 99        |           | 31 - 182 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C8 PFOA        | 97        |           | 48 - 162 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C9 PFNA        | 113       |           | 51 - 167 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C3 PFHxS       | 100       |           | 28 - 188 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C8 PFOS        | 107       |           | 51 - 159 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C6 PFDA        | 100       |           | 49 - 163 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |

**Lab Sample ID: LCS 410-300284/2-A**  
**Matrix: Water**  
**Analysis Batch: 301853**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 300284**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 22.0       |               | ng/L |   | 86   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 21.4       |               | ng/L |   | 83   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 20.1       |               | ng/L |   | 86   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 19.7       |               | ng/L |   | 83   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 22.7       |               | ng/L |   | 89   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 99        |           | 31 - 182 |
| 13C8 PFOA        | 97        |           | 48 - 162 |
| 13C9 PFNA        | 115       |           | 51 - 167 |
| 13C3 PFHxS       | 95        |           | 28 - 188 |
| 13C8 PFOS        | 115       |           | 51 - 159 |
| 13C6 PFDA        | 99        |           | 49 - 163 |

**Lab Sample ID: LCSD 410-300284/3-A**  
**Matrix: Water**  
**Analysis Batch: 301853**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 300284**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-----------|
|                                      |             |             |                |      |   |      |             |     |           |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 22.5        |                | ng/L |   | 88   | 51 - 145    | 2   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 21.6        |                | ng/L |   | 85   | 61 - 139    | 1   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.8        |                | ng/L |   | 85   | 58 - 134    | 2   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 20.0        |                | ng/L |   | 84   | 45 - 150    | 2   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 23.0        |                | ng/L |   | 90   | 56 - 138    | 1   | 30        |

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98357-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD LCSD</i> |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 101              |                  | 31 - 182      |
| 13C8 PFOA               | 101              |                  | 48 - 162      |
| 13C9 PFNA               | 109              |                  | 51 - 167      |
| 13C3 PFHxS              | 104              |                  | 28 - 188      |
| 13C8 PFOS               | 113              |                  | 51 - 159      |
| 13C6 PFDA               | 105              |                  | 49 - 163      |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98357-1

## LCMS

### Prep Batch: 300284

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-98357-1         | 52-50_POET_Pre_20220915  | Total/NA  | Water  | 537 IDA |            |
| 410-98357-2         | 52-50_POET_Mid_20220915  | Total/NA  | Water  | 537 IDA |            |
| 410-98357-3         | 52-50_POET_Post_20220915 | Total/NA  | Water  | 537 IDA |            |
| MB 410-300284/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA |            |
| LCS 410-300284/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-300284/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 301853

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-98357-1         | 52-50_POET_Pre_20220915  | Total/NA  | Water  | 537 IDA | 300284     |
| 410-98357-2         | 52-50_POET_Mid_20220915  | Total/NA  | Water  | 537 IDA | 300284     |
| 410-98357-3         | 52-50_POET_Post_20220915 | Total/NA  | Water  | 537 IDA | 300284     |
| MB 410-300284/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA | 300284     |
| LCS 410-300284/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA | 300284     |
| LCSD 410-300284/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA | 300284     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98357-1

**Client Sample ID: 52-50\_POET\_Pre\_20220915**

**Lab Sample ID: 410-98357-1**

Date Collected: 09/15/22 13:17

Matrix: Water

Date Received: 09/17/22 10:24

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 300284       | D5VP          | ELLE | 09/27/22 11:37       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 301853       | QD9Y          | ELLE | 10/01/22 06:01       |

**Client Sample ID: 52-50\_POET\_Mid\_20220915**

**Lab Sample ID: 410-98357-2**

Date Collected: 09/15/22 13:20

Matrix: Water

Date Received: 09/17/22 10:24

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 300284       | D5VP          | ELLE | 09/27/22 11:37       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 301853       | QD9Y          | ELLE | 10/01/22 06:12       |

**Client Sample ID: 52-50\_POET\_Post\_20220915**

**Lab Sample ID: 410-98357-3**

Date Collected: 09/15/22 13:23

Matrix: Water

Date Received: 09/17/22 10:24

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 300284       | D5VP          | ELLE | 09/27/22 11:37       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 301853       | QD9Y          | ELLE | 10/01/22 06:23       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98357-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |



# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98357-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98357-1

---

| Lab Sample ID | Client Sample ID         | Matrix | Collected      | Received       |
|---------------|--------------------------|--------|----------------|----------------|
| 410-98357-1   | 52-50_POET_Pre_20220915  | Water  | 09/15/22 13:17 | 09/17/22 10:24 |
| 410-98357-2   | 52-50_POET_Mid_20220915  | Water  | 09/15/22 13:20 | 09/17/22 10:24 |
| 410-98357-3   | 52-50_POET_Post_20220915 | Water  | 09/15/22 13:23 | 09/17/22 10:24 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



Lancaster Laboratories  
Environmental

Acct. # \_\_\_\_\_

410-98357 Chain of Custody

|   |  |   |       |                                    |   |                                       |  |              |  |      |      |  |                         |  |  |  |
|---|--|---|-------|------------------------------------|---|---------------------------------------|--|--------------|--|------|------|--|-------------------------|--|--|--|
| Client: <b>Sanborn Head &amp; Associates</b>  |  |   |       | <b>Matrix</b>                      |   |                                       | <b>Analyses Requested</b>                |              |  |      |      |  | <b>For Lab Use Only</b> |  |  |  |
| Project Name#: N. Monmouth PFAS 5197.01   |  | Site ID #:  |       | <input type="checkbox"/> Tissue    | <input type="checkbox"/> Ground           | <input type="checkbox"/> Surface      | <b>Preservation and Filtration Codes</b> |              |  |      |      |  | SF #: _____             |  |  |  |
| Project Manager: Andrew Buchy   |  | P.O. #: 5197.01   |       | <input type="checkbox"/> Sediment  | <input type="checkbox"/> Potable          | <input type="checkbox"/> NPDES        |  |              |  |      |      |  | SCR #: _____            |  |  |  |
| Sampler: Don Kelsey   |  | PWSID #:  |       | <input type="checkbox"/> Soil      | <input checked="" type="checkbox"/> Water | <input type="checkbox"/> Other: _____ | Total # of Containers                    |              | PFAS 537 Mod with isotope dilution (6 compounds) |      |      |  |                         |  | <b>Preservation Codes</b><br>H = HCl      T = Thiosulfate<br>N = HNO <sub>3</sub> B = NaOH<br>S = H <sub>2</sub> SO <sub>4</sub> P = H <sub>3</sub> PO <sub>4</sub><br>F = Field Filtered      O = Other |  |
| Phone #: 603-229-1900   |  | Quote #:  |       | <input type="checkbox"/> Composite | <input type="checkbox"/> Field Blank      | Remarks                               |  |              |  |      |      |  |                         |  |  |  |
| State where samples were collected: ME  |  | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>                                  |       | <b>Collection</b>                  |   |                                       |  |              |  |      |      |  |                         |  |  |  |
|   |  | Date  | Time  | Grab                               |   |                                       |  |              |  |      |      |  |                         |  |  |  |
| <b>Sample Identification</b>  |  |   |       |                                    |   |                                       |  |              |  |      |      |  |                         |  |  |  |
| 52-50_POET_Pre_20220915   |  | 9/15/22   | 13:17 | X                                  |   | X                                     | 2  | X            |  |      |      |  |                         |  |  |  |
| 52-50_POET_Mid_20220915   |  | ↓   | 13:20 | X                                  |   | X                                     | 2  | X            |  |      |      |  |                         |  |  |  |
| 52-50_POET_Post_20220915  |  | ↓   | 13:23 | X                                  |   | X                                     | 2  | X            |  |      |      |  |                         |  |  |  |
| <b>Turnaround Time Requested (TAT)</b> (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/><br>(Rush TAT is subject to laboratory approval and surcharges.) |  |   |       | Relinquished by: <i>Don Buchy</i>  |   | Date                                  | Time                                     | Received by: |  | Date | Time | <del>                     Relinquished by: _____ Date _____ Time _____ Received by: _____ Date _____ Time _____<br/>                     Relinquished by: _____ Date _____ Time _____ Received by: _____ Date _____ Time _____<br/>                     Relinquished by: _____ Date _____ Time _____ Received by: _____ Date _____ Time _____<br/>                     Relinquished by: _____ Date _____ Time _____ Received by: _____ Date _____ Time _____<br/>                     Relinquished by: _____ Date _____ Time _____ Received by: _____ Date _____ Time _____                 </del> |                         |  |  |  |
| Date results are needed:  |  |   |       | Relinquished by:                   |   | Date                                  | Time                                     | Received by: |  | Date | Time |  |                         |  |  |  |
| Rush results requested by (please check): E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>  |  |   |       | Relinquished by:                   |   | Date                                  | Time                                     | Received by: |  | Date | Time |  |                         |  |  |  |
| E-mail Address:   |  |   |       | Relinquished by:                   |   | Date                                  | Time                                     | Received by: |  | Date | Time |  |                         |  |  |  |
| Phone:  |  |   |       | Relinquished by:                   |   | Date                                  | Time                                     | Received by: |  | Date | Time |  |                         |  |  |  |
| <b>Data Package Options</b> (please check if required)  |  |   |       | Relinquished by:                   |   | Date                                  | Time                                     | Received by: |  | Date | Time | Relinquished by Commercial Carrier: _____<br>Temperature upon receipt <u>4.1</u> °C  |                         |  |  |  |
| Level I <input type="checkbox"/> MA MCP <input type="checkbox"/>  |  | Level II <input checked="" type="checkbox"/> CT RCP <input type="checkbox"/>                              |       | Relinquished by:                   |   | Date                                  | Time                                     | Received by: |  | Date | Time |  |                         |  |  |  |
| Level VI <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/>   |  | NJ DKQP <input type="checkbox"/> NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B |       | Relinquished by:                   |   | Date                                  | Time                                     | Received by: |  | Date | Time |  |                         |  |  |  |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, format: <input type="checkbox"/> Standard (flat file) <input type="checkbox"/> EQUS 4-file format/SHA   |  |   |       | Relinquished by:                   |   | Date                                  | Time                                     | Received by: |  | Date | Time |  |                         |  |  |  |
| UPS _____ FedEx <input checked="" type="checkbox"/> Other _____   |  |   |       | Relinquished by:                   |   | Date                                  | Time                                     | Received by: |  | Date | Time |  |                         |  |  |  |

*11/11/22*



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-98357-1

Login Number: 98357

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: McBeth, Jessica

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |



## ANALYTICAL REPORT

|                 |  |
|-----------------|--|
| Lab Number:     | L2258491   |
| Client:         | Sanborn, Head & Associates, Inc.<br>20 Foundry Street<br>Concord, NH 03301 |
| ATTN:           | Andrew Buchy   |
| Phone:          | (603) 229-1900   |
| Project Name:   | N. MONMOUTH PFAS   |
| Project Number: | 5197.01  |
| Report Date:    | 11/28/22   |

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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

---

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



**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258491  
**Report Date:** 11/28/22

| <b>Alpha<br/>Sample ID</b> | <b>Client ID</b>         | <b>Matrix</b> | <b>Sample<br/>Location</b> | <b>Collection<br/>Date/Time</b> | <b>Receive Date</b> |
|----------------------------|--------------------------|---------------|----------------------------|---------------------------------|---------------------|
| L2258491-01                | 52-51_POET_PRE_20221019  | WATER         | N. MONMOUTH, ME            | 10/19/22 15:45                  | 10/20/22            |
| L2258491-02                | 52-51_POET_MID_20221019  | WATER         | N. MONMOUTH, ME            | 10/19/22 15:47                  | 10/20/22            |
| L2258491-03                | 52-51_POET_POST_20221019 | WATER         | N. MONMOUTH, ME            | 10/19/22 15:50                  | 10/20/22            |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258491  
**Report Date:** 11/28/22

### 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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258491  
**Report Date:** 11/28/22

### Case Narrative (continued)

#### Sample Receipt

L2258491-01: The collection date and time on the chain of custody was 19-OCT-22 15:40; however, the collection date/time on the container label was 19-OCT-22 15:45. At the client's request, the collection date/time is reported as 19-OCT-22 15:45.

#### Perfluorinated Alkyl Acids by Isotope Dilution

L2258491-01, -02, and -03: Sample results for Perfluorohexanesulfonic Acid (PFHxS), Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) are reported as the sum of the branched and linear isomers. WG1706775-1 and WG1706775-2: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

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

Authorized Signature:  Darian Dailey

Title: Technical Director/Representative

Date: 11/28/22



# ORGANICS

# SEMIVOLATILES

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258491  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

Lab ID: L2258491-01  
 Client ID: 52-51\_POET\_PRE\_20221019  
 Sample Location: N. MONMOUTH, ME

Date Collected: 10/19/22 15:45  
 Date Received: 10/20/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/23/22 22:39  
 Analyst: AC

Extraction Method: ALPHA 23528  
 Extraction Date: 11/01/22 17:45

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | 1.82   |           | ng/l  | 1.76 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | 2.96   |           | ng/l  | 1.76 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | 16.2   |           | ng/l  | 1.76 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.76 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 185    |           | ng/l  | 1.76 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.76 | --  | 1               |
| PFAS, Total (6)   | 206    |           | ng/l  | 1.76 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 88         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 119        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 97         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 95         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 99         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 94         |           | 62-124              |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258491  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

Lab ID: L2258491-02  
 Client ID: 52-51\_POET\_MID\_20221019  
 Sample Location: N. MONMOUTH, ME

Date Collected: 10/19/22 15:47  
 Date Received: 10/20/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/23/22 22:56  
 Analyst: AC

Extraction Method: ALPHA 23528  
 Extraction Date: 11/01/22 17:45

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.75 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.75 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.75 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.75 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 8.20   |           | ng/l  | 1.75 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.75 | --  | 1               |
| PFAS, Total (6)   | 8.20   |           | ng/l  | 1.75 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 86         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 96         |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 99         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 98         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 91         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 93         |           | 62-124              |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258491  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

Lab ID: L2258491-03  
 Client ID: 52-51\_POET\_POST\_20221019  
 Sample Location: N. MONMOUTH, ME

Date Collected: 10/19/22 15:50  
 Date Received: 10/20/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/23/22 23:12  
 Analyst: AC

Extraction Method: ALPHA 23528  
 Extraction Date: 11/01/22 17:45

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.77 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.77 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.77 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.77 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 2.63   | F         | ng/l  | 1.77 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.77 | --  | 1               |
| PFAS, Total (6)   | 2.63   |           | ng/l  | 1.77 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 93         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 96         |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 100        |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 99         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 96         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 92         |           | 62-124              |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258491  
**Report Date:** 11/28/22

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 11/07/22 17:38  
Analyst: RS

Extraction Method: ALPHA 23528  
Extraction Date: 11/01/22 17:45

| Parameter  | Result | Qualifier | Units | RL   | MDL |
|--|--------|-----------|-------|------|-----|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1706775-1 |        |           |       |      |     |
| Perfluoroheptanoic Acid (PFHpA)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorohexanesulfonic Acid (PFHxS)   | ND     |           | ng/l  | 2.00 | --  |
| Perfluorooctanoic Acid (PFOA)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorononanoic Acid (PFNA)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorooctanesulfonic Acid (PFOS)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorodecanoic Acid (PFDA)  | ND     |           | ng/l  | 2.00 | --  |
| PFAS, Total (6)  | ND     |           | ng/l  | 2.00 | --  |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258491  
**Report Date:** 11/28/22

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 11/07/22 17:38  
Analyst: RS

Extraction Method: ALPHA 23528  
Extraction Date: 11/01/22 17:45

| Parameter  | Result | Qualifier | Units | RL | MDL |
|--|--------|-----------|-------|----|-----|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1706775-1 |        |           |       |    |     |

| Surrogate (Extracted Internal Standard)  | %Recovery | Qualifier | Acceptance Criteria |
|--|-----------|-----------|---------------------|
| Perfluoro[13C4]Butanoic Acid (MPFBA)   | 115       |           | 58-132              |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)  | 137       |           | 62-163              |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)  | 114       |           | 70-131              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 98        |           | 12-142              |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 98        |           | 57-129              |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 98        |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 128       |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)  | 122       |           | 62-129              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 143       |           | 14-147              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)  | 113       |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)  | 115       |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 122       |           | 62-124              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 152       |           | 10-162              |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | 117       | Q         | 24-116              |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | 146       | Q         | 55-137              |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)  | 50        |           | 5-112               |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 103       |           | 27-126              |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 126       |           | 48-131              |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | 151       | Q         | 22-136              |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 119       |           | 10-165              |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 174       |           | 10-206              |

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** N. MONMOUTH PFAS

**Lab Number:** L2258491

**Project Number:** 5197.01

**Report Date:** 11/28/22

| <b>Parameter</b>  | <b>LCS<br/>%Recovery</b> | <b>Qual</b> | <b>LCSD<br/>%Recovery</b> | <b>Qual</b> | <b>%Recovery<br/>Limits</b> | <b>RPD</b> | <b>Qual</b> | <b>RPD<br/>Limits</b> |
|---|--------------------------|-------------|---------------------------|-------------|-----------------------------|------------|-------------|-----------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1706775-2 |                          |             |                           |             |                             |            |             |                       |
| Perfluoroheptanoic Acid (PFHpA)   | 97                       |             | -                         |             | 58-159                      | -          |             | 30                    |
| Perfluorohexanesulfonic Acid (PFHxS)  | 109                      |             | -                         |             | 69-177                      | -          |             | 30                    |
| Perfluorooctanoic Acid (PFOA)   | 87                       |             | -                         |             | 63-159                      | -          |             | 30                    |
| Perfluorononanoic Acid (PFNA)   | 101                      |             | -                         |             | 68-171                      | -          |             | 30                    |
| Perfluorooctanesulfonic Acid (PFOS)   | 112                      |             | -                         |             | 52-151                      | -          |             | 30                    |
| Perfluorodecanoic Acid (PFDA)   | 107                      |             | -                         |             | 63-171                      | -          |             | 30                    |



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: N. MONMOUTH PFAS

Lab Number: L2258491

Project Number: 5197.01

Report Date: 11/28/22

| Parameter   | LCS       |      | LCSD      |      | %Recovery |      | RPD | RPD    |  |
|---|-----------|------|-----------|------|-----------|------|-----|--------|--|
|   | %Recovery | Qual | %Recovery | Qual | Limits    | Qual |     | Limits |  |
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1706775-2 |           |      |           |      |           |      |     |        |  |

| Surrogate (Extracted Internal Standard)  | LCS       |      | LCSD      |      | Acceptance<br>Criteria |
|--|-----------|------|-----------|------|------------------------|
|  | %Recovery | Qual | %Recovery | Qual |                        |
| Perfluoro[13C4]Butanoic Acid (MPFBA)   | 109       |      |           |      | 58-132                 |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)  | 127       |      |           |      | 62-163                 |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)  | 107       |      |           |      | 70-131                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 98        |      |           |      | 12-142                 |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 98        |      |           |      | 57-129                 |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 98        |      |           |      | 60-129                 |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 123       |      |           |      | 71-134                 |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)  | 119       |      |           |      | 62-129                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 139       |      |           |      | 14-147                 |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)  | 106       |      |           |      | 59-139                 |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)  | 113       |      |           |      | 69-131                 |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 114       |      |           |      | 62-124                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 146       |      |           |      | 10-162                 |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | 112       |      |           |      | 24-116                 |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | 132       |      |           |      | 55-137                 |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)  | 35        |      |           |      | 5-112                  |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 103       |      |           |      | 27-126                 |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 120       |      |           |      | 48-131                 |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | 147       | Q    |           |      | 22-136                 |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 106       |      |           |      | 10-165                 |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 166       |      |           |      | 10-206                 |

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** N. MONMOUTH PFAS

**Lab Number:** L2258491

**Project Number:** 5197.01

**Report Date:** 11/28/22

| <i>Parameter</i>  | <i>Native Sample</i> | <i>MS Added</i> | <i>MS Found</i> | <i>MS %Recovery</i> | <i>Qual</i> | <i>MSD Found</i> | <i>MSD %Recovery</i> | <i>Qual</i> | <i>Recovery Limits</i> | <i>RPD</i> | <i>Qual</i> | <i>RPD Limits</i> |
|---|----------------------|-----------------|-----------------|---------------------|-------------|------------------|----------------------|-------------|------------------------|------------|-------------|-------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1706775-3 QC Sample: L2258484-01 Client ID: MS Sample |                      |                 |                 |                     |             |                  |                      |             |                        |            |             |                   |
| Perfluoroheptanoic Acid (PFHpA)   | 3.38                 | 36              | 40.6            | 103                 |             | -                | -                    |             | 58-159                 | -          |             | 30                |
| Perfluorohexanesulfonic Acid (PFHxS)  | 5.14                 | 32.9            | 41.9            | 112                 |             | -                | -                    |             | 69-177                 | -          |             | 30                |
| Perfluorooctanoic Acid (PFOA)   | 29.1                 | 36              | 62.2            | 92                  |             | -                | -                    |             | 63-159                 | -          |             | 30                |
| Perfluorononanoic Acid (PFNA)   | ND                   | 36              | 38.3            | 106                 |             | -                | -                    |             | 68-171                 | -          |             | 30                |
| Perfluorooctanesulfonic Acid (PFOS)   | 11.5                 | 33.4            | 43.5            | 96                  |             | -                | -                    |             | 52-151                 | -          |             | 30                |
| Perfluorodecanoic Acid (PFDA)   | ND                   | 36              | 36.6            | 102                 |             | -                | -                    |             | 63-171                 | -          |             | 30                |

| <i>Surrogate (Extracted Internal Standard)</i>     | <i>MS % Recovery</i> | <i>Qualifier</i> | <i>MSD % Recovery</i> | <i>Qualifier</i> | <i>Acceptance Criteria</i> |
|--|----------------------|------------------|-----------------------|------------------|----------------------------|
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 113                  |                  |                       |                  | 62-124                     |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 95                   |                  |                       |                  | 60-129                     |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 122                  |                  |                       |                  | 71-134                     |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 110                  |                  |                       |                  | 69-131                     |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 120                  |                  |                       |                  | 62-129                     |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 106                  |                  |                       |                  | 59-139                     |

## Lab Duplicate Analysis

Batch Quality Control

Project Name: N. MONMOUTH PFAS

Project Number: 5197.01

Lab Number: L2258491

Report Date: 11/28/22

| Parameter  | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|--|---------------|------------------|-------|-----|------|------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1706775-4 QC Sample: L2258484-02 Client ID: DUP Sample |               |                  |       |     |      |            |
| Perfluoroheptanoic Acid (PFHpA)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorohexanesulfonic Acid (PFHxS)   | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorooctanoic Acid (PFOA)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorononanoic Acid (PFNA)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorooctanesulfonic Acid (PFOS)  | 20.7          | 105              | ng/l  | 134 | Q    | 30         |
| Perfluorodecanoic Acid (PFDA)  | ND            | ND               | ng/l  | NC  |      | 30         |

| Surrogate (Extracted Internal Standard)            | %Recovery | Qualifier | %Recovery | Qualifier | Acceptance Criteria |
|--|-----------|-----------|-----------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 89        |           | 87        |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 123       |           | 125       |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 114       |           | 112       |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 98        |           | 95        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 107       |           | 101       |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 113       |           | 108       |           | 62-124              |

**Project Name:** N. MONMOUTH PFAS**Lab Number:** L2258491**Project Number:** 5197.01**Report Date:** 11/28/22**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

**Cooler Information**

| <b>Cooler</b> | <b>Custody Seal</b> |
|---------------|---------------------|
| A             | Absent              |

**Container Information**

| <b>Container ID</b> | <b>Container Type</b>          | <b>Cooler</b> | <b>Initial pH</b> | <b>Final pH</b> | <b>Temp deg C</b> | <b>Pres</b> | <b>Seal</b> | <b>Frozen Date/Time</b> | <b>Analysis(*)</b>       |
|---------------------|--------------------------------|---------------|-------------------|-----------------|-------------------|-------------|-------------|-------------------------|--------------------------|
| L2258491-01A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258491-01B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258491-02A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258491-02B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258491-03A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258491-03B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11282213:03  
**Lab Number:** L2258491  
**Report Date:** 11/28/22

### PFAS PARAMETER SUMMARY

| Parameter   | Acronym      | CAS Number  |
|---|--------------|-------------|
| <b>PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)</b>                          |              |             |
| 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    |
| <b>PERFLUOROALKYL SULFONIC ACIDS (PFSAs)</b>                            |              |             |
| 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    |
| <b>FLUOROTELOMERS</b>   |              |             |
| 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 |
| <b>PERFLUOROALKANE SULFONAMIDES (FASAs)</b>                             |              |             |
| Perfluorooctanesulfonamide  | FOSA/PFOSA   | 754-91-6    |
| N-Ethyl Perfluorooctane Sulfonamide                                     | NEtFOSA      | 4151-50-2   |
| N-Methyl Perfluorooctane Sulfonamide                                    | NMeFOSA      | 31506-32-8  |
| <b>PERFLUOROALKANE SULFONYL SUBSTANCES</b>                              |              |             |
| 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   |
| <b>PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS</b>                  |              |             |
| 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 |
| <b>CHLORO-PERFLUOROALKYL SULFONIC ACIDS</b>                             |              |             |
| 11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid                      | 11Cl-PF3OUdS | 763051-92-9 |
| 9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid                        | 9Cl-PF3ONS   | 756426-58-1 |
| <b>PERFLUOROETHER SULFONIC ACIDS (PFESAs)</b>                           |              |             |
| Perfluoro(2-Ethoxyethane)Sulfonic Acid                                  | PFEEA        | 113507-82-7 |
| <b>PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)</b>               |              |             |
| 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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11282213:03  
**Lab Number:** L2258491  
**Report Date:** 11/28/22

### 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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258491  
**Report Date:** 11/28/22

## 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.)<br><br>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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258491  
**Report Date:** 11/28/22

#### 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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258491  
**Report Date:** 11/28/22

**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.)

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258491  
**Report Date:** 11/28/22

## REFERENCES

- 134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

## LIMITATION OF LIABILITIES

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

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



## 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, NO<sub>2</sub>, NO<sub>3</sub>.

### 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, SM4500CI-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, **LCHAT 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.





## ANALYTICAL REPORT

|                 |  |
|-----------------|--|
| Lab Number:     | L2259155   |
| Client:         | Sanborn, Head & Associates, Inc.<br>20 Foundry Street<br>Concord, NH 03301 |
| ATTN:           | Andrew Buchy   |
| Phone:          | (603) 229-1900   |
| Project Name:   | N.MONMOUTH PFAS  |
| Project Number: | 5197.01  |
| Report Date:    | 11/28/22   |

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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

---

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



**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259155  
**Report Date:** 11/28/22

| <b>Alpha<br/>Sample ID</b> | <b>Client ID</b>         | <b>Matrix</b> | <b>Sample<br/>Location</b> | <b>Collection<br/>Date/Time</b> | <b>Receive Date</b> |
|----------------------------|--------------------------|---------------|----------------------------|---------------------------------|---------------------|
| L2259155-01                | 52-59_POET_PRE_20221020  | WATER         | N.MONMOUTH, ME             | 10/20/22 09:30                  | 10/21/22            |
| L2259155-02                | 52-59_POET_MID_20221020  | WATER         | N.MONMOUTH, ME             | 10/20/22 09:33                  | 10/21/22            |
| L2259155-03                | 52-59_POET_POST_20221020 | WATER         | N.MONMOUTH, ME             | 10/20/22 09:35                  | 10/21/22            |
| L2259155-04                | FB-01_20221020           | WATER         | N.MONMOUTH, ME             | 10/20/22 09:15                  | 10/21/22            |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259155  
**Report Date:** 11/28/22

### 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259155  
**Report Date:** 11/28/22

**Case Narrative (continued)**

Perfluorinated Alkyl Acids by Isotope Dilution

L2259155-01 through -04: Sample results for Perfluorohexanesulfonic Acid (PFHxS), Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) are reported as the sum of the branched and linear isomers. WG1706775-1 and WG1706775-2: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

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

Authorized Signature:

*Darian Dailey* Darian Dailey

Title: Technical Director/Representative

Date: 11/28/22



# ORGANICS

# SEMIVOLATILES

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259155  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

**Lab ID:** L2259155-01  
**Client ID:** 52-59\_POET\_PRE\_20221020  
**Sample Location:** N.MONMOUTH, ME

**Date Collected:** 10/20/22 09:30  
**Date Received:** 10/21/22  
**Field Prep:** Not Specified

**Sample Depth:**

**Matrix:** Water  
**Analytical Method:** 134,LCMSMS-ID  
**Analytical Date:** 11/23/22 23:46  
**Analyst:** AC

**Extraction Method:** ALPHA 23528  
**Extraction Date:** 11/01/22 17:45

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.79 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | 2.12   |           | ng/l  | 1.79 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | 12.2   |           | ng/l  | 1.79 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.79 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 2.29   |           | ng/l  | 1.79 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.79 | --  | 1               |
| PFAS, Total (6)   | 16.6   |           | ng/l  | 1.79 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 83         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 115        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 99         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 94         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 107        |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 95         |           | 62-124              |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259155  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

**Lab ID:** L2259155-02  
**Client ID:** 52-59\_POET\_MID\_20221020  
**Sample Location:** N.MONMOUTH, ME

**Date Collected:** 10/20/22 09:33  
**Date Received:** 10/21/22  
**Field Prep:** Not Specified

**Sample Depth:**

**Matrix:** Water  
**Analytical Method:** 134,LCMSMS-ID  
**Analytical Date:** 11/24/22 00:02  
**Analyst:** AC

**Extraction Method:** ALPHA 23528  
**Extraction Date:** 11/01/22 17:45

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.76 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.76 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.76 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.76 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 9.82   |           | ng/l  | 1.76 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.76 | --  | 1               |
| PFAS, Total (6)   | 9.82   |           | ng/l  | 1.76 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 81         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 96         |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 95         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 92         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 93         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 94         |           | 62-124              |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259155  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

**Lab ID:** L2259155-03  
**Client ID:** 52-59\_POET\_POST\_20221020  
**Sample Location:** N.MONMOUTH, ME

**Date Collected:** 10/20/22 09:35  
**Date Received:** 10/21/22  
**Field Prep:** Not Specified

**Sample Depth:**

**Matrix:** Water  
**Analytical Method:** 134,LCMSMS-ID  
**Analytical Date:** 11/24/22 00:19  
**Analyst:** AC

**Extraction Method:** ALPHA 23528  
**Extraction Date:** 11/01/22 17:45

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.75 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.75 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.75 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.75 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | ND     |           | ng/l  | 1.75 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.75 | --  | 1               |
| PFAS, Total (6)   | ND     |           | ng/l  | 1.75 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 74         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 93         |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 96         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 94         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 91         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 93         |           | 62-124              |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259155  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

Lab ID: L2259155-04  
 Client ID: FB-01\_20221020  
 Sample Location: N.MONMOUTH, ME

Date Collected: 10/20/22 09:15  
 Date Received: 10/21/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/24/22 00:35  
 Analyst: AC

Extraction Method: ALPHA 23528  
 Extraction Date: 11/01/22 17:45

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.78 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.78 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.78 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.78 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | ND     |           | ng/l  | 1.78 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.78 | --  | 1               |
| PFAS, Total (6)   | ND     |           | ng/l  | 1.78 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 86         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 101        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 94         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 89         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 94         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 92         |           | 62-124              |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259155  
**Report Date:** 11/28/22

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 11/07/22 17:38  
Analyst: RS

Extraction Method: ALPHA 23528  
Extraction Date: 11/01/22 17:45

| <b>Parameter</b>  | <b>Result</b> | <b>Qualifier</b> | <b>Units</b> | <b>RL</b> | <b>MDL</b> |
|---|---------------|------------------|--------------|-----------|------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-04 Batch: WG1706775-1</b> |               |                  |              |           |            |
| Perfluoroheptanoic Acid (PFHpA)   | ND            |                  | ng/l         | 2.00      | --         |
| Perfluorohexanesulfonic Acid (PFHxS)  | ND            |                  | ng/l         | 2.00      | --         |
| Perfluorooctanoic Acid (PFOA)   | ND            |                  | ng/l         | 2.00      | --         |
| Perfluorononanoic Acid (PFNA)   | ND            |                  | ng/l         | 2.00      | --         |
| Perfluorooctanesulfonic Acid (PFOS)   | ND            |                  | ng/l         | 2.00      | --         |
| Perfluorodecanoic Acid (PFDA)   | ND            |                  | ng/l         | 2.00      | --         |
| PFAS, Total (6)   | ND            |                  | ng/l         | 2.00      | --         |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259155  
**Report Date:** 11/28/22

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 11/07/22 17:38  
Analyst: RS

Extraction Method: ALPHA 23528  
Extraction Date: 11/01/22 17:45

| Parameter  | Result | Qualifier | Units | RL | MDL |
|--|--------|-----------|-------|----|-----|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-04 Batch: WG1706775-1 |        |           |       |    |     |

| Surrogate (Extracted Internal Standard)  | %Recovery  | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[13C4]Butanoic Acid (MPFBA)   | 115        |           | 58-132              |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)  | 137        |           | 62-163              |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)  | 114        |           | 70-131              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 98         |           | 12-142              |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 98         |           | 57-129              |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 98         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 128        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)  | 122        |           | 62-129              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 143        |           | 14-147              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)  | 113        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)  | 115        |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 122        |           | 62-124              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 152        |           | 10-162              |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | <b>117</b> | Q         | 24-116              |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | <b>146</b> | Q         | 55-137              |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)  | 50         |           | 5-112               |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 103        |           | 27-126              |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 126        |           | 48-131              |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | <b>151</b> | Q         | 22-136              |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 119        |           | 10-165              |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 174        |           | 10-206              |



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** N.MONMOUTH PFAS

**Lab Number:** L2259155

**Project Number:** 5197.01

**Report Date:** 11/28/22

| <b>Parameter</b>  | <b>LCS<br/>%Recovery</b> | <b>Qual</b> | <b>LCSD<br/>%Recovery</b> | <b>Qual</b> | <b>%Recovery<br/>Limits</b> | <b>RPD</b> | <b>Qual</b> | <b>RPD<br/>Limits</b> |
|---|--------------------------|-------------|---------------------------|-------------|-----------------------------|------------|-------------|-----------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 Batch: WG1706775-2 |                          |             |                           |             |                             |            |             |                       |
| Perfluoroheptanoic Acid (PFHpA)   | 97                       |             | -                         |             | 58-159                      | -          |             | 30                    |
| Perfluorohexanesulfonic Acid (PFHxS)  | 109                      |             | -                         |             | 69-177                      | -          |             | 30                    |
| Perfluorooctanoic Acid (PFOA)   | 87                       |             | -                         |             | 63-159                      | -          |             | 30                    |
| Perfluorononanoic Acid (PFNA)   | 101                      |             | -                         |             | 68-171                      | -          |             | 30                    |
| Perfluorooctanesulfonic Acid (PFOS)   | 112                      |             | -                         |             | 52-151                      | -          |             | 30                    |
| Perfluorodecanoic Acid (PFDA)   | 107                      |             | -                         |             | 63-171                      | -          |             | 30                    |

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: N.MONMOUTH PFAS

Lab Number: L2259155

Project Number: 5197.01

Report Date: 11/28/22

| Parameter   | LCS<br>%Recovery | Qual | LCS<br>%Recovery | Qual | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits |
|---|------------------|------|------------------|------|---------------------|-----|------|---------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 Batch: WG1706775-2 |                  |      |                  |      |                     |     |      |               |

| Surrogate (Extracted Internal Standard)  | LCS<br>%Recovery | Qual | LCS<br>%Recovery | Qual | Acceptance<br>Criteria |
|--|------------------|------|------------------|------|------------------------|
| Perfluoro[13C4]Butanoic Acid (MPFBA)   | 109              |      |                  |      | 58-132                 |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)  | 127              |      |                  |      | 62-163                 |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)  | 107              |      |                  |      | 70-131                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 98               |      |                  |      | 12-142                 |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 98               |      |                  |      | 57-129                 |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 98               |      |                  |      | 60-129                 |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 123              |      |                  |      | 71-134                 |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)  | 119              |      |                  |      | 62-129                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 139              |      |                  |      | 14-147                 |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)  | 106              |      |                  |      | 59-139                 |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)  | 113              |      |                  |      | 69-131                 |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 114              |      |                  |      | 62-124                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 146              |      |                  |      | 10-162                 |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | 112              |      |                  |      | 24-116                 |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | 132              |      |                  |      | 55-137                 |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)  | 35               |      |                  |      | 5-112                  |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 103              |      |                  |      | 27-126                 |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 120              |      |                  |      | 48-131                 |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | 147              | Q    |                  |      | 22-136                 |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 106              |      |                  |      | 10-165                 |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 166              |      |                  |      | 10-206                 |

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** N.MONMOUTH PFAS

**Lab Number:** L2259155

**Project Number:** 5197.01

**Report Date:** 11/28/22

| <i>Parameter</i>  | <i>Native Sample</i> | <i>MS Added</i> | <i>MS Found</i> | <i>MS %Recovery</i> | <i>Qual</i> | <i>MSD Found</i> | <i>MSD %Recovery</i> | <i>Qual</i> | <i>Recovery Limits</i> | <i>RPD</i> | <i>Qual</i> | <i>RPD Limits</i> |
|---|----------------------|-----------------|-----------------|---------------------|-------------|------------------|----------------------|-------------|------------------------|------------|-------------|-------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1706775-3 QC Sample: L2258484-01 Client ID: MS Sample |                      |                 |                 |                     |             |                  |                      |             |                        |            |             |                   |
| Perfluoroheptanoic Acid (PFHpA)   | 3.38                 | 36              | 40.6            | 103                 |             | -                | -                    |             | 58-159                 | -          |             | 30                |
| Perfluorohexanesulfonic Acid (PFHxS)  | 5.14                 | 32.9            | 41.9            | 112                 |             | -                | -                    |             | 69-177                 | -          |             | 30                |
| Perfluorooctanoic Acid (PFOA)   | 29.1                 | 36              | 62.2            | 92                  |             | -                | -                    |             | 63-159                 | -          |             | 30                |
| Perfluorononanoic Acid (PFNA)   | ND                   | 36              | 38.3            | 106                 |             | -                | -                    |             | 68-171                 | -          |             | 30                |
| Perfluorooctanesulfonic Acid (PFOS)   | 11.5                 | 33.4            | 43.5            | 96                  |             | -                | -                    |             | 52-151                 | -          |             | 30                |
| Perfluorodecanoic Acid (PFDA)   | ND                   | 36              | 36.6            | 102                 |             | -                | -                    |             | 63-171                 | -          |             | 30                |

| <i>Surrogate (Extracted Internal Standard)</i>     | <i>MS % Recovery</i> | <i>Qualifier</i> | <i>MSD % Recovery</i> | <i>Qualifier</i> | <i>Acceptance Criteria</i> |
|--|----------------------|------------------|-----------------------|------------------|----------------------------|
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 113                  |                  |                       |                  | 62-124                     |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 95                   |                  |                       |                  | 60-129                     |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 122                  |                  |                       |                  | 71-134                     |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 110                  |                  |                       |                  | 69-131                     |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 120                  |                  |                       |                  | 62-129                     |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 106                  |                  |                       |                  | 59-139                     |

## Lab Duplicate Analysis

Batch Quality Control

Project Name: N.MONMOUTH PFAS

Project Number: 5197.01

Lab Number: L2259155

Report Date: 11/28/22

| Parameter  | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|--|---------------|------------------|-------|-----|------|------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1706775-4 QC Sample: L2258484-02 Client ID: DUP Sample |               |                  |       |     |      |            |
| Perfluoroheptanoic Acid (PFHpA)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorohexanesulfonic Acid (PFHxS)   | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorooctanoic Acid (PFOA)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorononanoic Acid (PFNA)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorooctanesulfonic Acid (PFOS)  | 20.7          | 105              | ng/l  | 134 | Q    | 30         |
| Perfluorodecanoic Acid (PFDA)  | ND            | ND               | ng/l  | NC  |      | 30         |

| Surrogate (Extracted Internal Standard)            | %Recovery | Qualifier | %Recovery | Qualifier | Acceptance Criteria |
|--|-----------|-----------|-----------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 89        |           | 87        |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 123       |           | 125       |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 114       |           | 112       |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 98        |           | 95        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 107       |           | 101       |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 113       |           | 108       |           | 62-124              |

**Project Name:** N.MONMOUTH PFAS

**Project Number:** 5197.01

Serial\_No:11282217:13

**Lab Number:** L2259155

**Report Date:** 11/28/22

**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

**Cooler Information**

| <b>Cooler</b> | <b>Custody Seal</b> |
|---------------|---------------------|
| A             | Absent              |

**Container Information**

| <b>Container ID</b> | <b>Container Type</b>          | <b>Cooler</b> | <b>Initial pH</b> | <b>Final pH</b> | <b>Temp deg C</b> | <b>Pres</b> | <b>Seal</b> | <b>Frozen Date/Time</b> | <b>Analysis(*)</b>       |
|---------------------|--------------------------------|---------------|-------------------|-----------------|-------------------|-------------|-------------|-------------------------|--------------------------|
| L2259155-01A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259155-01B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259155-02A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259155-02B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259155-03A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259155-03B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259155-04A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11282217:13  
**Lab Number:** L2259155  
**Report Date:** 11/28/22

### PFAS PARAMETER SUMMARY

| Parameter   | Acronym      | CAS Number  |
|---|--------------|-------------|
| <b>PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)</b>                          |              |             |
| 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    |
| <b>PERFLUOROALKYL SULFONIC ACIDS (PFSAs)</b>                            |              |             |
| 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    |
| <b>FLUOROTELOMERS</b>   |              |             |
| 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 |
| <b>PERFLUOROALKANE SULFONAMIDES (FASAs)</b>                             |              |             |
| Perfluorooctanesulfonamide  | FOSA/PFOSA   | 754-91-6    |
| N-Ethyl Perfluorooctane Sulfonamide                                     | NEtFOSA      | 4151-50-2   |
| N-Methyl Perfluorooctane Sulfonamide                                    | NMeFOSA      | 31506-32-8  |
| <b>PERFLUOROALKANE SULFONYL SUBSTANCES</b>                              |              |             |
| 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   |
| <b>PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS</b>                  |              |             |
| 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 |
| <b>CHLORO-PERFLUOROALKYL SULFONIC ACIDS</b>                             |              |             |
| 11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid                      | 11Cl-PF3OUdS | 763051-92-9 |
| 9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid                        | 9Cl-PF3ONS   | 756426-58-1 |
| <b>PERFLUOROETHER SULFONIC ACIDS (PFESAs)</b>                           |              |             |
| Perfluoro(2-Ethoxyethane)Sulfonic Acid                                  | PFEESA       | 113507-82-7 |
| <b>PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)</b>               |              |             |
| 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11282217:13  
**Lab Number:** L2259155  
**Report Date:** 11/28/22

### 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259155  
**Report Date:** 11/28/22

## 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.)<br><br>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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259155  
**Report Date:** 11/28/22

### 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259155  
**Report Date:** 11/28/22

#### **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.)

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259155  
**Report Date:** 11/28/22

## REFERENCES

- 134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

## LIMITATION OF LIABILITIES

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

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



## 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, NO<sub>2</sub>, NO<sub>3</sub>.

### 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, SM4500CI-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, **LCHAT 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.





## ANALYTICAL REPORT

|                 |  |
|-----------------|--|
| Lab Number:     | L2258489   |
| Client:         | Sanborn, Head & Associates, Inc.<br>20 Foundry Street<br>Concord, NH 03301 |
| ATTN:           | Andrew Buchy   |
| Phone:          | (603) 229-1900   |
| Project Name:   | N. MONMOUTH PFAS   |
| Project Number: | 5197.01  |
| Report Date:    | 11/28/22   |

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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

---

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



**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258489  
**Report Date:** 11/28/22

| <b>Alpha<br/>Sample ID</b> | <b>Client ID</b>         | <b>Matrix</b> | <b>Sample<br/>Location</b> | <b>Collection<br/>Date/Time</b> | <b>Receive Date</b> |
|----------------------------|--------------------------|---------------|----------------------------|---------------------------------|---------------------|
| L2258489-01                | 52-61_POET_PRE_20221019  | WATER         | N. MONMOUTH, ME            | 10/19/22 14:10                  | 10/20/22            |
| L2258489-02                | 52-61_POET_MID_20221019  | WATER         | N. MONMOUTH, ME            | 10/19/22 14:13                  | 10/20/22            |
| L2258489-03                | 52-61_POET_POST_20221019 | WATER         | N. MONMOUTH, ME            | 10/19/22 14:15                  | 10/20/22            |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258489  
**Report Date:** 11/28/22

### 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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258489  
**Report Date:** 11/28/22

### Case Narrative (continued)

Perfluorinated Alkyl Acids by Isotope Dilution

L2258489-01, -02, and -03: Sample results for Perfluorohexanesulfonic Acid (PFHxS), Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) are reported as the sum of the branched and linear isomers. WG1706775-1 and WG1706775-2: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

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

Authorized Signature:

*Darian Dailey* Darian Dailey

Title: Technical Director/Representative

Date: 11/28/22

# ORGANICS

# SEMIVOLATILES

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258489  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

Lab ID: L2258489-01  
 Client ID: 52-61\_POET\_PRE\_20221019  
 Sample Location: N. MONMOUTH, ME

Date Collected: 10/19/22 14:10  
 Date Received: 10/20/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/24/22 06:23  
 Analyst: AC

Extraction Method: ALPHA 23528  
 Extraction Date: 11/01/22 17:45

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | 9.18   |           | ng/l  | 1.78 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | 4.91   |           | ng/l  | 1.78 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | 56.6   |           | ng/l  | 1.78 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | 5.12   |           | ng/l  | 1.78 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 138    |           | ng/l  | 1.78 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.78 | --  | 1               |
| PFAS, Total (6)   | 214    |           | ng/l  | 1.78 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 83         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 108        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 91         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 94         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 98         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 90         |           | 62-124              |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258489  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

Lab ID: L2258489-02  
 Client ID: 52-61\_POET\_MID\_20221019  
 Sample Location: N. MONMOUTH, ME

Date Collected: 10/19/22 14:13  
 Date Received: 10/20/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/23/22 21:49  
 Analyst: AC

Extraction Method: ALPHA 23528  
 Extraction Date: 11/01/22 17:45

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.78 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.78 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.78 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.78 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 4.86   |           | ng/l  | 1.78 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.78 | --  | 1               |
| PFAS, Total (6)   | 4.86   |           | ng/l  | 1.78 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 80         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 96         |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 93         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 84         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 72         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 78         |           | 62-124              |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258489  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

**Lab ID:** L2258489-03  
**Client ID:** 52-61\_POET\_POST\_20221019  
**Sample Location:** N. MONMOUTH, ME

**Date Collected:** 10/19/22 14:15  
**Date Received:** 10/20/22  
**Field Prep:** Not Specified

**Sample Depth:**

**Matrix:** Water  
**Analytical Method:** 134,LCMSMS-ID  
**Analytical Date:** 11/24/22 06:40  
**Analyst:** AC

**Extraction Method:** ALPHA 23528  
**Extraction Date:** 11/01/22 17:45

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.76 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.76 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.76 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.76 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | ND     |           | ng/l  | 1.76 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.76 | --  | 1               |
| PFAS, Total (6)   | ND     |           | ng/l  | 1.76 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 79         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 97         |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 96         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 92         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 91         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 93         |           | 62-124              |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258489  
**Report Date:** 11/28/22

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 11/07/22 17:38  
Analyst: RS

Extraction Method: ALPHA 23528  
Extraction Date: 11/01/22 17:45

| Parameter  | Result | Qualifier | Units | RL   | MDL |
|--|--------|-----------|-------|------|-----|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1706775-1 |        |           |       |      |     |
| Perfluoroheptanoic Acid (PFHpA)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorohexanesulfonic Acid (PFHxS)   | ND     |           | ng/l  | 2.00 | --  |
| Perfluorooctanoic Acid (PFOA)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorononanoic Acid (PFNA)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorooctanesulfonic Acid (PFOS)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorodecanoic Acid (PFDA)  | ND     |           | ng/l  | 2.00 | --  |
| PFAS, Total (6)  | ND     |           | ng/l  | 2.00 | --  |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258489  
**Report Date:** 11/28/22

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 11/07/22 17:38  
Analyst: RS

Extraction Method: ALPHA 23528  
Extraction Date: 11/01/22 17:45

| Parameter  | Result | Qualifier | Units | RL | MDL |
|--|--------|-----------|-------|----|-----|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1706775-1 |        |           |       |    |     |

| Surrogate (Extracted Internal Standard)  | %Recovery  | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[13C4]Butanoic Acid (MPFBA)   | 115        |           | 58-132              |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)  | 137        |           | 62-163              |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)  | 114        |           | 70-131              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 98         |           | 12-142              |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 98         |           | 57-129              |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 98         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 128        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)  | 122        |           | 62-129              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 143        |           | 14-147              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)  | 113        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)  | 115        |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 122        |           | 62-124              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 152        |           | 10-162              |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | <b>117</b> | Q         | 24-116              |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | <b>146</b> | Q         | 55-137              |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)  | 50         |           | 5-112               |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 103        |           | 27-126              |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 126        |           | 48-131              |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | <b>151</b> | Q         | 22-136              |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 119        |           | 10-165              |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 174        |           | 10-206              |



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** N. MONMOUTH PFAS

**Project Number:** 5197.01

**Lab Number:** L2258489

**Report Date:** 11/28/22

| Parameter   | <i>LCS</i><br>%Recovery | <i>Qual</i> | <i>LCSD</i><br>%Recovery | <i>Qual</i> | <i>%Recovery</i><br>Limits | <i>RPD</i> | <i>Qual</i> | <i>RPD</i><br>Limits |
|---|-------------------------|-------------|--------------------------|-------------|----------------------------|------------|-------------|----------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1706775-2 |                         |             |                          |             |                            |            |             |                      |
| Perfluoroheptanoic Acid (PFHpA)   | 97                      |             | -                        |             | 58-159                     | -          |             | 30                   |
| Perfluorohexanesulfonic Acid (PFHxS)  | 109                     |             | -                        |             | 69-177                     | -          |             | 30                   |
| Perfluorooctanoic Acid (PFOA)   | 87                      |             | -                        |             | 63-159                     | -          |             | 30                   |
| Perfluorononanoic Acid (PFNA)   | 101                     |             | -                        |             | 68-171                     | -          |             | 30                   |
| Perfluorooctanesulfonic Acid (PFOS)   | 112                     |             | -                        |             | 52-151                     | -          |             | 30                   |
| Perfluorodecanoic Acid (PFDA)   | 107                     |             | -                        |             | 63-171                     | -          |             | 30                   |

## Lab Control Sample Analysis Batch Quality Control

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258489  
**Report Date:** 11/28/22

| Parameter   | LCS<br>%Recovery | Qual | LCSD<br>%Recovery | Qual | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits |
|---|------------------|------|-------------------|------|---------------------|-----|------|---------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1706775-2 |                  |      |                   |      |                     |     |      |               |

| Surrogate (Extracted Internal Standard)  | LCS<br>%Recovery | Qual | LCSD<br>%Recovery | Qual | Acceptance<br>Criteria |
|--|------------------|------|-------------------|------|------------------------|
| Perfluoro[13C4]Butanoic Acid (MPFBA)   | 109              |      |                   |      | 58-132                 |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)  | 127              |      |                   |      | 62-163                 |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)  | 107              |      |                   |      | 70-131                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 98               |      |                   |      | 12-142                 |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 98               |      |                   |      | 57-129                 |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 98               |      |                   |      | 60-129                 |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 123              |      |                   |      | 71-134                 |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)  | 119              |      |                   |      | 62-129                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 139              |      |                   |      | 14-147                 |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)  | 106              |      |                   |      | 59-139                 |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)  | 113              |      |                   |      | 69-131                 |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 114              |      |                   |      | 62-124                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 146              |      |                   |      | 10-162                 |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | 112              |      |                   |      | 24-116                 |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | 132              |      |                   |      | 55-137                 |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)  | 35               |      |                   |      | 5-112                  |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 103              |      |                   |      | 27-126                 |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 120              |      |                   |      | 48-131                 |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | 147              | Q    |                   |      | 22-136                 |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 106              |      |                   |      | 10-165                 |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 166              |      |                   |      | 10-206                 |

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** N. MONMOUTH PFAS

**Lab Number:** L2258489

**Project Number:** 5197.01

**Report Date:** 11/28/22

| <i>Parameter</i>  | <i>Native Sample</i> | <i>MS Added</i> | <i>MS Found</i> | <i>MS %Recovery</i> | <i>Qual</i> | <i>MSD Found</i> | <i>MSD %Recovery</i> | <i>Qual</i> | <i>Recovery Limits</i> | <i>RPD</i> | <i>Qual</i> | <i>RPD Limits</i> |
|---|----------------------|-----------------|-----------------|---------------------|-------------|------------------|----------------------|-------------|------------------------|------------|-------------|-------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1706775-3 QC Sample: L2258484-01 Client ID: MS Sample |                      |                 |                 |                     |             |                  |                      |             |                        |            |             |                   |
| Perfluoroheptanoic Acid (PFHpA)   | 3.38                 | 36              | 40.6            | 103                 |             | -                | -                    |             | 58-159                 | -          |             | 30                |
| Perfluorohexanesulfonic Acid (PFHxS)  | 5.14                 | 32.9            | 41.9            | 112                 |             | -                | -                    |             | 69-177                 | -          |             | 30                |
| Perfluorooctanoic Acid (PFOA)   | 29.1                 | 36              | 62.2            | 92                  |             | -                | -                    |             | 63-159                 | -          |             | 30                |
| Perfluorononanoic Acid (PFNA)   | ND                   | 36              | 38.3            | 106                 |             | -                | -                    |             | 68-171                 | -          |             | 30                |
| Perfluorooctanesulfonic Acid (PFOS)   | 11.5                 | 33.4            | 43.5            | 96                  |             | -                | -                    |             | 52-151                 | -          |             | 30                |
| Perfluorodecanoic Acid (PFDA)   | ND                   | 36              | 36.6            | 102                 |             | -                | -                    |             | 63-171                 | -          |             | 30                |

| <i>Surrogate (Extracted Internal Standard)</i>     | <i>MS % Recovery</i> | <i>Qualifier</i> | <i>MSD % Recovery</i> | <i>Qualifier</i> | <i>Acceptance Criteria</i> |
|--|----------------------|------------------|-----------------------|------------------|----------------------------|
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 113                  |                  |                       |                  | 62-124                     |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 95                   |                  |                       |                  | 60-129                     |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 122                  |                  |                       |                  | 71-134                     |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 110                  |                  |                       |                  | 69-131                     |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 120                  |                  |                       |                  | 62-129                     |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 106                  |                  |                       |                  | 59-139                     |

## Lab Duplicate Analysis

Batch Quality Control

Project Name: N. MONMOUTH PFAS

Project Number: 5197.01

Lab Number: L2258489

Report Date: 11/28/22

| Parameter  | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|--|---------------|------------------|-------|-----|------|------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1706775-4 QC Sample: L2258484-02 Client ID: DUP Sample |               |                  |       |     |      |            |
| Perfluoroheptanoic Acid (PFHpA)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorohexanesulfonic Acid (PFHxS)   | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorooctanoic Acid (PFOA)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorononanoic Acid (PFNA)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorooctanesulfonic Acid (PFOS)  | 20.7          | 105              | ng/l  | 134 | Q    | 30         |
| Perfluorodecanoic Acid (PFDA)  | ND            | ND               | ng/l  | NC  |      | 30         |

| Surrogate (Extracted Internal Standard)            | %Recovery | Qualifier | %Recovery | Qualifier | Acceptance Criteria |
|--|-----------|-----------|-----------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 89        |           | 87        |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 123       |           | 125       |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 114       |           | 112       |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 98        |           | 95        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 107       |           | 101       |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 113       |           | 108       |           | 62-124              |

**Project Name:** N. MONMOUTH PFAS**Lab Number:** L2258489**Project Number:** 5197.01**Report Date:** 11/28/22**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

**Cooler Information**

| <b>Cooler</b> | <b>Custody Seal</b> |
|---------------|---------------------|
| A             | Absent              |

**Container Information**

| <b>Container ID</b> | <b>Container Type</b>          | <b>Cooler</b> | <b>Initial pH</b> | <b>Final pH</b> | <b>Temp deg C</b> | <b>Pres</b> | <b>Seal</b> | <b>Frozen Date/Time</b> | <b>Analysis(*)</b>       |
|---------------------|--------------------------------|---------------|-------------------|-----------------|-------------------|-------------|-------------|-------------------------|--------------------------|
| L2258489-01A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258489-01B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258489-02A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258489-02B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258489-03A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2258489-03B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.0               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11282213:04  
**Lab Number:** L2258489  
**Report Date:** 11/28/22

### PFAS PARAMETER SUMMARY

| Parameter   | Acronym      | CAS Number  |
|---|--------------|-------------|
| <b>PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)</b>                          |              |             |
| 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    |
| <b>PERFLUOROALKYL SULFONIC ACIDS (PFSAs)</b>                            |              |             |
| 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    |
| <b>FLUOROTELOMERS</b>   |              |             |
| 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 |
| <b>PERFLUOROALKANE SULFONAMIDES (FASAs)</b>                             |              |             |
| Perfluorooctanesulfonamide  | FOSA/PFOSA   | 754-91-6    |
| N-Ethyl Perfluorooctane Sulfonamide                                     | NEtFOSA      | 4151-50-2   |
| N-Methyl Perfluorooctane Sulfonamide                                    | NMeFOSA      | 31506-32-8  |
| <b>PERFLUOROALKANE SULFONYL SUBSTANCES</b>                              |              |             |
| 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   |
| <b>PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS</b>                  |              |             |
| 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 |
| <b>CHLORO-PERFLUOROALKYL SULFONIC ACIDS</b>                             |              |             |
| 11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid                      | 11Cl-PF3OUdS | 763051-92-9 |
| 9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid                        | 9Cl-PF3ONS   | 756426-58-1 |
| <b>PERFLUOROETHER SULFONIC ACIDS (PFESAs)</b>                           |              |             |
| Perfluoro(2-Ethoxyethane)Sulfonic Acid                                  | PFEEASA      | 113507-82-7 |
| <b>PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)</b>               |              |             |
| 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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11282213:04  
**Lab Number:** L2258489  
**Report Date:** 11/28/22

### 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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258489  
**Report Date:** 11/28/22

## 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.)<br><br>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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258489  
**Report Date:** 11/28/22

### 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:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258489  
**Report Date:** 11/28/22

**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.)

**Project Name:** N. MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2258489  
**Report Date:** 11/28/22

## REFERENCES

- 134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

## LIMITATION OF LIABILITIES

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

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



## 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, NO<sub>2</sub>, NO<sub>3</sub>.

### 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, SM4500CI-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, **LCHAT 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.

10/19/22

C2258489

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab:

ALPHA Job #



Westborough, MA Mansfield, MA
TEL: 508-898-9220 TEL: 508-822-9300
FAX: 508-898-9193 FAX: 508-822-3286

Project Information
Project Name: N. Monmouth PFAS
Project Location: N. Monmouth, ME
Project #: 5197.01
Project Manager: Andrew Buchy
ALPHA Quote #: 403080

Report Information / Data Deliverables
FAX EMAIL
ADEX Add'l Deliverables

Billing Information
X Same as Client Info
PO #: 5197.01

Regulatory Requirements/Report Limits
State/Fed Program

Criteria

Client Information
Client: Sanborn Head & Associates
Address: 20 Foundry Street, Concord, NH
Phone: 603-229-1900
Email: swhitney@sanbornhead.com, abuchy@sanbornhead.com

Turn-Around Time
X Standard
Rush (Only if Pre-Approved)

Due Date:

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Level II Data Package, EQUIS 4-File format, SHA Standard flat file
MEDEP v.6 text EDD

ANALYSIS

PFAS 537.1 Mod with Isotope Dilution (6 compounds)

SAMPLING HANDLING
Filtration
Done
X Not Needed
Lab to do Preservation
Lab to do
(please specify below)

TOTAL # BOTTLES

Table with columns: ALPHA Lab ID (Lab Use Only), Sample ID, Collection (Date, Time), Sample Matrix, Sampler's Initials, and 6 analysis columns. Contains 3 rows of data for POET samples.

Container Type P
Preservative O

Relinquished By: Tom Hensel Date/Time: 10/19/22 17:15
Received By: [Signature] Date/Time: 10/19/22 17:15

Order - AAL 10/19/22 20845

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-98356-1

Client Project/Site: N Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



Authorized for release by:  
10/5/2022 2:49:26 AM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.





Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer".

---

Kelly Bauer  
Project Manager  
10/5/2022 2:49:26 AM

# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 9  |
| QC Sample Results . . . . .        | 10 |
| QC Association Summary . . . . .   | 12 |
| Lab Chronicle . . . . .            | 13 |
| Certification Summary . . . . .    | 14 |
| Method Summary . . . . .           | 15 |
| Sample Summary . . . . .           | 16 |
| Chain of Custody . . . . .         | 17 |
| Receipt Checklists . . . . .       | 18 |





## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98356-1

### Qualifiers

#### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| I         | Value is EMPC (estimated maximum possible concentration).  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98356-1

---

**Job ID: 410-98356-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative**  
**410-98356-1**

**Receipt**

The samples were received on 9/17/2022 10:24 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.1°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98356-1

## Client Sample ID: 52-65\_POET\_Pre\_20220915

Lab Sample ID: 410-98356-1

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 2.5    |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 20     |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 2.5    |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 4.9    | I         | 1.7 | 0.84 | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-65\_POET\_Mid\_20220915

Lab Sample ID: 410-98356-2

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 1.4    | J         | 1.6 | 0.82 | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-65\_POET\_Post\_20220915

Lab Sample ID: 410-98356-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98356-1

**Client Sample ID: 52-65\_POET\_Pre\_20220915**

**Lab Sample ID: 410-98356-1**

Date Collected: 09/15/22 12:15

Matrix: Water

Date Received: 09/17/22 10:24

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 2.5       |           | 1.7      | 0.42 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:28 | 1       |
| Perfluorooctanoic acid (PFOA)        | 20        |           | 1.7      | 0.42 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:28 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.7      | 0.42 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:28 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 2.5       |           | 1.7      | 0.42 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:28 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 4.9       | I         | 1.7      | 0.84 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:28 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.7      | 0.42 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:28 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 101       |           | 31 - 182 |      |      |   | 09/27/22 11:37 | 10/01/22 05:28 | 1       |
| 13C8 PFOA                            | 99        |           | 48 - 162 |      |      |   | 09/27/22 11:37 | 10/01/22 05:28 | 1       |
| 13C9 PFNA                            | 115       |           | 51 - 167 |      |      |   | 09/27/22 11:37 | 10/01/22 05:28 | 1       |
| 13C3 PFHxS                           | 98        |           | 28 - 188 |      |      |   | 09/27/22 11:37 | 10/01/22 05:28 | 1       |
| 13C8 PFOS                            | 111       |           | 51 - 159 |      |      |   | 09/27/22 11:37 | 10/01/22 05:28 | 1       |
| 13C6 PFDA                            | 106       |           | 49 - 163 |      |      |   | 09/27/22 11:37 | 10/01/22 05:28 | 1       |

**Client Sample ID: 52-65\_POET\_Mid\_20220915**

**Lab Sample ID: 410-98356-2**

Date Collected: 09/15/22 12:18

Matrix: Water

Date Received: 09/17/22 10:24

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND        |           | 1.6      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:39 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:39 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:39 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |           | 1.6      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:39 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 1.4       | J         | 1.6      | 0.82 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:39 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:39 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 97        |           | 31 - 182 |      |      |   | 09/27/22 11:37 | 10/01/22 05:39 | 1       |
| 13C8 PFOA                            | 97        |           | 48 - 162 |      |      |   | 09/27/22 11:37 | 10/01/22 05:39 | 1       |
| 13C9 PFNA                            | 107       |           | 51 - 167 |      |      |   | 09/27/22 11:37 | 10/01/22 05:39 | 1       |
| 13C3 PFHxS                           | 94        |           | 28 - 188 |      |      |   | 09/27/22 11:37 | 10/01/22 05:39 | 1       |
| 13C8 PFOS                            | 102       |           | 51 - 159 |      |      |   | 09/27/22 11:37 | 10/01/22 05:39 | 1       |
| 13C6 PFDA                            | 95        |           | 49 - 163 |      |      |   | 09/27/22 11:37 | 10/01/22 05:39 | 1       |

**Client Sample ID: 52-65\_POET\_Post\_20220915**

**Lab Sample ID: 410-98356-3**

Date Collected: 09/15/22 12:20

Matrix: Water

Date Received: 09/17/22 10:24

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND        |           | 1.6      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:50 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:50 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:50 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |           | 1.6      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:50 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND        |           | 1.6      | 0.82 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:50 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 09/27/22 11:37 | 10/01/22 05:50 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 103       |           | 31 - 182 |      |      |   | 09/27/22 11:37 | 10/01/22 05:50 | 1       |
| 13C8 PFOA                            | 102       |           | 48 - 162 |      |      |   | 09/27/22 11:37 | 10/01/22 05:50 | 1       |
| 13C9 PFNA                            | 119       |           | 51 - 167 |      |      |   | 09/27/22 11:37 | 10/01/22 05:50 | 1       |

Euofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98356-1

Client Sample ID: 52-65\_POET\_Post\_20220915

Lab Sample ID: 410-98356-3

Date Collected: 09/15/22 12:20

Matrix: Water

Date Received: 09/17/22 10:24

## Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C3 PFHxS              | 100              |                  | 28 - 188      | 09/27/22 11:37  | 10/01/22 05:50  | 1              |
| 13C8 PFOS               | 110              |                  | 51 - 159      | 09/27/22 11:37  | 10/01/22 05:50  | 1              |
| 13C6 PFDA               | 93               |                  | 49 - 163      | 09/27/22 11:37  | 10/01/22 05:50  | 1              |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98356-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID         | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|--------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                          | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-98356-1        | 52-65_POET_Pre_20220915  | 101   | 99                 | 115                | 98                 | 111                | 106                |
| 410-98356-2        | 52-65_POET_Mid_20220915  | 97  | 97                 | 107                | 94                 | 102                | 95                 |
| 410-98356-3        | 52-65_POET_Post_20220915 | 103   | 102                | 119                | 100                | 110                | 93                 |
| LCS 410-300284/2-A | Lab Control Sample       | 99  | 97                 | 115                | 95                 | 115                | 99                 |
| LCS 410-300284/3-A | Lab Control Sample Dup   | 101   | 101                | 109                | 104                | 113                | 105                |
| MB 410-300284/1-A  | Method Blank             | 99  | 97                 | 113                | 100                | 107                | 100                |

### Surrogate Legend

C4PFHA = 13C4 PFHpA  
 C8PFOA = 13C8 PFOA  
 C9PFNA = 13C9 PFNA  
 C3PFHS = 13C3 PFHxS  
 C8PFOS = 13C8 PFOS  
 C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98356-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-300284/1-A**  
**Matrix: Water**  
**Analysis Batch: 301853**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 300284**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 1.0  | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/27/22 11:37 | 10/01/22 04:33 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 99        |           | 31 - 182 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C8 PFOA        | 97        |           | 48 - 162 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C9 PFNA        | 113       |           | 51 - 167 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C3 PFHxS       | 100       |           | 28 - 188 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C8 PFOS        | 107       |           | 51 - 159 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |
| 13C6 PFDA        | 100       |           | 49 - 163 | 09/27/22 11:37 | 10/01/22 04:33 | 1       |

**Lab Sample ID: LCS 410-300284/2-A**  
**Matrix: Water**  
**Analysis Batch: 301853**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 300284**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 22.0       |               | ng/L |   | 86   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 21.4       |               | ng/L |   | 83   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 20.1       |               | ng/L |   | 86   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 19.7       |               | ng/L |   | 83   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 22.7       |               | ng/L |   | 89   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 99        |           | 31 - 182 |
| 13C8 PFOA        | 97        |           | 48 - 162 |
| 13C9 PFNA        | 115       |           | 51 - 167 |
| 13C3 PFHxS       | 95        |           | 28 - 188 |
| 13C8 PFOS        | 115       |           | 51 - 159 |
| 13C6 PFDA        | 99        |           | 49 - 163 |

**Lab Sample ID: LCSD 410-300284/3-A**  
**Matrix: Water**  
**Analysis Batch: 301853**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 300284**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-----------|
|                                      |             |             |                |      |   |      |             |     |           |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 22.5        |                | ng/L |   | 88   | 51 - 145    | 2   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 21.6        |                | ng/L |   | 85   | 61 - 139    | 1   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.8        |                | ng/L |   | 85   | 58 - 134    | 2   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 20.0        |                | ng/L |   | 84   | 45 - 150    | 2   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 23.0        |                | ng/L |   | 90   | 56 - 138    | 1   | 30        |

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98356-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 101              |                  | 31 - 182      |
| 13C8 PFOA               | 101              |                  | 48 - 162      |
| 13C9 PFNA               | 109              |                  | 51 - 167      |
| 13C3 PFHxS              | 104              |                  | 28 - 188      |
| 13C8 PFOS               | 113              |                  | 51 - 159      |
| 13C6 PFDA               | 105              |                  | 49 - 163      |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98356-1

## LCMS

### Prep Batch: 300284

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-98356-1         | 52-65_POET_Pre_20220915  | Total/NA  | Water  | 537 IDA |            |
| 410-98356-2         | 52-65_POET_Mid_20220915  | Total/NA  | Water  | 537 IDA |            |
| 410-98356-3         | 52-65_POET_Post_20220915 | Total/NA  | Water  | 537 IDA |            |
| MB 410-300284/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA |            |
| LCS 410-300284/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-300284/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 301853

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-98356-1         | 52-65_POET_Pre_20220915  | Total/NA  | Water  | 537 IDA | 300284     |
| 410-98356-2         | 52-65_POET_Mid_20220915  | Total/NA  | Water  | 537 IDA | 300284     |
| 410-98356-3         | 52-65_POET_Post_20220915 | Total/NA  | Water  | 537 IDA | 300284     |
| MB 410-300284/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA | 300284     |
| LCS 410-300284/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA | 300284     |
| LCSD 410-300284/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA | 300284     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98356-1

**Client Sample ID: 52-65\_POET\_Pre\_20220915**

**Lab Sample ID: 410-98356-1**

Date Collected: 09/15/22 12:15

Matrix: Water

Date Received: 09/17/22 10:24

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 300284       | D5VP    | ELLE | 09/27/22 11:37       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 301853       | QD9Y    | ELLE | 10/01/22 05:28       |

**Client Sample ID: 52-65\_POET\_Mid\_20220915**

**Lab Sample ID: 410-98356-2**

Date Collected: 09/15/22 12:18

Matrix: Water

Date Received: 09/17/22 10:24

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 300284       | D5VP    | ELLE | 09/27/22 11:37       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 301853       | QD9Y    | ELLE | 10/01/22 05:39       |

**Client Sample ID: 52-65\_POET\_Post\_20220915**

**Lab Sample ID: 410-98356-3**

Date Collected: 09/15/22 12:20

Matrix: Water

Date Received: 09/17/22 10:24

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 300284       | D5VP    | ELLE | 09/27/22 11:37       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 301853       | QD9Y    | ELLE | 10/01/22 05:50       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98356-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98356-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98356-1

---

| Lab Sample ID | Client Sample ID         | Matrix | Collected      | Received       |
|---------------|--------------------------|--------|----------------|----------------|
| 410-98356-1   | 52-65_POET_Pre_20220915  | Water  | 09/15/22 12:15 | 09/17/22 10:24 |
| 410-98356-2   | 52-65_POET_Mid_20220915  | Water  | 09/15/22 12:18 | 09/17/22 10:24 |
| 410-98356-3   | 52-65_POET_Post_20220915 | Water  | 09/15/22 12:20 | 09/17/22 10:24 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



Lancaster Laboratories Environmental

Environment



410-98356 Chain of Custody

est/Chain of Custody

Acct. #

|   |  |  |             |   |   |                                       |   |                                  |                |               |             |
|---|--|--|-------------|---|---|---------------------------------------|---|----------------------------------|----------------|---------------|-------------|
| Client: <b>Sanborn Head &amp; Associates</b>  |  | <b>Matrix</b>  |             | <b>Analyses Requested</b>                                       |   |                                       |   | <b>For Lab Use Only</b>          |                |               |             |
| Project Name/#: N. Monmouth PFAS 5197.01  |  | Site ID #: _____   |             | <input type="checkbox"/> Tissue                                 | <input type="checkbox"/> Ground           | <input type="checkbox"/> Surface      | <b>Preservation and Filtration Codes</b>  |                                  |                |               |             |
| Project Manager: Andrew Buchy   |  | P.O. #: 5197.01  |             | <input type="checkbox"/> Sediment                               | <input type="checkbox"/> Potable          | <input type="checkbox"/> NPDES        | SF #: _____   |                                  |                |               |             |
| Sampler: Don Kelsey   |  | PWSID #: _____   |             | <input type="checkbox"/> Soil                                   | <input checked="" type="checkbox"/> Water | <input type="checkbox"/> Other: _____ | SCR #: _____  |                                  |                |               |             |
| Phone #: 603-229-1900   |  | Quote #: _____   |             | <input type="checkbox"/> Field Blank                            | <b>Total # of Containers</b>              |                                       | Preservation Codes<br>H = HCl      T = Thiosulfate<br>N = HNO <sub>3</sub> B = NaOH<br>S = H <sub>2</sub> SO <sub>4</sub> P = H <sub>3</sub> PO <sub>4</sub><br>F = Field Filtered    O = Other |                                  |                |               |             |
| State where samples were collected: ME  |  | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>                                 |             | PFAS 537 Mod with isotope dilution (6 compounds)                |   |                                       |   |                                  |                |               |             |
| <b>Collection</b>   |  | <b>Composite</b>   |             |   |   |                                       |   |                                  |                |               |             |
| <b>Sample Identification</b>  |  | <b>Date</b>  | <b>Time</b> | <b>Grab</b>   | <b>Soil</b>                               | <b>Water</b>                          | <b>Other</b>  | <b>Total # of Containers</b>     | <b>Remarks</b> |               |             |
| 52-65_POET_Pre_20220915   |  | 9/15/22  | 12:15       | X   |   | X                                     |   | 2                                | BATCH QC       |               |             |
| 52-65_POET_Mid_20220915   |  | ↓  | 12:18       | X   |   | X                                     |   | 2                                |                |               |             |
| 52-65_POET_Post_20220915  |  | ↓  | 12:20       | X   |   | X                                     |   | 2                                |                |               |             |
| <b>Turnaround Time Requested (TAT)</b> (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |  | (Rush TAT is subject to laboratory approval and surcharges.)   |             | Relinquished by: <i>[Signature]</i>                             |   | Date: 9/14/22                         | Time: VIA FEDEX   | Received by: _____               |                | Date: _____   | Time: _____ |
| Date results are needed: _____  |  | Rush results requested by (please check): E-Mail <input type="checkbox"/> Phone <input type="checkbox"/> |             | Relinquished by: _____  |   | Date: _____                           | Time: _____   | Received by: _____               |                | Date: _____   | Time: _____ |
| E-mail Address: _____   |  | Phone: _____   |             | Relinquished by: _____  |   | Date: _____                           | Time: _____   | Received by: _____               |                | Date: _____   | Time: _____ |
| <b>Data Package Options</b> (please check if required)  |  | Level I <input type="checkbox"/> MA MCP <input type="checkbox"/>   |             | Relinquished by: _____  |   | Date: _____                           | Time: _____   | Received by: _____               |                | Date: _____   | Time: _____ |
| Level II <input checked="" type="checkbox"/> CT RCP <input type="checkbox"/>  |  | Level VI <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/>                                    |             | Relinquished by: _____  |   | Date: _____                           | Time: _____   | Received by: <i>to Hess</i>      |                | Date: 9/17/22 | Time: 1024  |
| NJ DKQP <input type="checkbox"/> NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B                         |  | EQUS 4-file format/SHA   |             | Relinquished by Commercial Carrier: _____                       |   |                                       |   | Temperature upon receipt: 4.1 °C |                |               |             |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |  | If yes, format: Standard (flat file)   |             | UPS _____ FedEx <input checked="" type="checkbox"/> Other _____ |   |                                       |   |                                  |                |               |             |

*MM*

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15

## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-98356-1

**Login Number: 98356**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: McBeth, Jessica**

| Question   | Answer | Comment      |
|--|--------|--------------|
| The cooler's custody seal is intact.   | True   |              |
| The cooler or samples do not appear to have been compromised or tampered with.             | True   |              |
| Samples were received on ice.  | True   |              |
| Cooler Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen).        | True   |              |
| Cooler Temperature is recorded.  | True   |              |
| WV: Container Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen). | N/A    |              |
| WV: Container Temperature is recorded.   | N/A    |              |
| COC is present.  | True   |              |
| COC is filled out in ink and legible.  | True   |              |
| COC is filled out with all pertinent information.  | True   |              |
| There are no discrepancies between the containers received and the COC.                    | True   |              |
| Sample containers have legible labels.   | True   |              |
| Containers are not broken or leaking.  | True   |              |
| Sample collection date/times are provided.   | True   |              |
| Appropriate sample containers are used.  | True   |              |
| Sample bottles are completely filled.  | True   |              |
| There is sufficient vol. for all requested analyses.                                       | True   |              |
| Is the Field Sampler's name present on COC?  | True   |              |
| Sample custody seals are intact.   | N/A    | Not present. |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?                | N/A    |              |



## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-98355-1

Client Project/Site: N Monmouth PFAS 5197.01

**For:**

Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Attn: Andrew Buchy



*Authorized for release by:*  
10/11/2022 12:28:05 PM

Kelly Bauer, Project Manager  
(717)556-7262

[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.





Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink that reads "Kelly Bauer". The signature is written in a cursive, flowing style.

---

Kelly Bauer  
Project Manager  
10/11/2022 12:28:05 PM



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 3  |
| Definitions/Glossary . . . . .     | 4  |
| Case Narrative . . . . .           | 5  |
| Detection Summary . . . . .        | 6  |
| Client Sample Results . . . . .    | 7  |
| Isotope Dilution Summary . . . . . | 9  |
| QC Sample Results . . . . .        | 10 |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 16 |
| Sample Summary . . . . .           | 17 |
| Chain of Custody . . . . .         | 18 |
| Receipt Checklists . . . . .       | 19 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98355-1

### Qualifiers

#### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| I         | Value is EMPC (estimated maximum possible concentration).  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98355-1

---

**Job ID: 410-98355-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative  
410-98355-1**

**Receipt**

The samples were received on 9/17/2022 10:24 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.1°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98355-1

## Client Sample ID: 52-66\_POET\_Pre\_20220916

Lab Sample ID: 410-98355-1

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 5.1    |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 42     |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 4.0    |           | 1.7 | 0.42 | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 13     | I         | 1.7 | 0.83 | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-66\_POET\_Mid\_20220916

Lab Sample ID: 410-98355-2

No Detections.

## Client Sample ID: 52-66\_POET\_Post\_20220916

Lab Sample ID: 410-98355-3

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|------|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 1.0    | J         | 1.7 | 0.85 | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: FB-01\_20220916

Lab Sample ID: 410-98355-4

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98355-1

**Client Sample ID: 52-66\_POET\_Pre\_20220916**

**Lab Sample ID: 410-98355-1**

Date Collected: 09/16/22 09:32

Matrix: Water

Date Received: 09/17/22 10:24

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 5.1       |           | 1.7      | 0.42 | ng/L |   | 09/28/22 07:50 | 09/29/22 13:38 | 1       |
| Perfluorooctanoic acid (PFOA)        | 42        |           | 1.7      | 0.42 | ng/L |   | 09/28/22 07:50 | 09/29/22 13:38 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.7      | 0.42 | ng/L |   | 09/28/22 07:50 | 09/29/22 13:38 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 4.0       |           | 1.7      | 0.42 | ng/L |   | 09/28/22 07:50 | 09/29/22 13:38 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 13        | I         | 1.7      | 0.83 | ng/L |   | 09/28/22 07:50 | 09/29/22 13:38 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.7      | 0.42 | ng/L |   | 09/28/22 07:50 | 09/29/22 13:38 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 96        |           | 31 - 182 |      |      |   | 09/28/22 07:50 | 09/29/22 13:38 | 1       |
| 13C8 PFOA                            | 93        |           | 48 - 162 |      |      |   | 09/28/22 07:50 | 09/29/22 13:38 | 1       |
| 13C9 PFNA                            | 103       |           | 51 - 167 |      |      |   | 09/28/22 07:50 | 09/29/22 13:38 | 1       |
| 13C3 PFHxS                           | 100       |           | 28 - 188 |      |      |   | 09/28/22 07:50 | 09/29/22 13:38 | 1       |
| 13C8 PFOS                            | 104       |           | 51 - 159 |      |      |   | 09/28/22 07:50 | 09/29/22 13:38 | 1       |
| 13C6 PFDA                            | 87        |           | 49 - 163 |      |      |   | 09/28/22 07:50 | 09/29/22 13:38 | 1       |

**Client Sample ID: 52-66\_POET\_Mid\_20220916**

**Lab Sample ID: 410-98355-2**

Date Collected: 09/16/22 09:35

Matrix: Water

Date Received: 09/17/22 10:24

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND        |           | 1.6      | 0.41 | ng/L |   | 09/28/22 07:50 | 09/29/22 13:50 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 09/28/22 07:50 | 09/29/22 13:50 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 09/28/22 07:50 | 09/29/22 13:50 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |           | 1.6      | 0.41 | ng/L |   | 09/28/22 07:50 | 09/29/22 13:50 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND        |           | 1.6      | 0.81 | ng/L |   | 09/28/22 07:50 | 09/29/22 13:50 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.6      | 0.41 | ng/L |   | 09/28/22 07:50 | 09/29/22 13:50 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 93        |           | 31 - 182 |      |      |   | 09/28/22 07:50 | 09/29/22 13:50 | 1       |
| 13C8 PFOA                            | 93        |           | 48 - 162 |      |      |   | 09/28/22 07:50 | 09/29/22 13:50 | 1       |
| 13C9 PFNA                            | 101       |           | 51 - 167 |      |      |   | 09/28/22 07:50 | 09/29/22 13:50 | 1       |
| 13C3 PFHxS                           | 93        |           | 28 - 188 |      |      |   | 09/28/22 07:50 | 09/29/22 13:50 | 1       |
| 13C8 PFOS                            | 99        |           | 51 - 159 |      |      |   | 09/28/22 07:50 | 09/29/22 13:50 | 1       |
| 13C6 PFDA                            | 86        |           | 49 - 163 |      |      |   | 09/28/22 07:50 | 09/29/22 13:50 | 1       |

**Client Sample ID: 52-66\_POET\_Post\_20220916**

**Lab Sample ID: 410-98355-3**

Date Collected: 09/16/22 09:38

Matrix: Water

Date Received: 09/17/22 10:24

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND        |           | 1.7      | 0.43 | ng/L |   | 09/28/22 07:50 | 09/29/22 14:01 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND        |           | 1.7      | 0.43 | ng/L |   | 09/28/22 07:50 | 09/29/22 14:01 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |           | 1.7      | 0.43 | ng/L |   | 09/28/22 07:50 | 09/29/22 14:01 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |           | 1.7      | 0.43 | ng/L |   | 09/28/22 07:50 | 09/29/22 14:01 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 1.0       | J         | 1.7      | 0.85 | ng/L |   | 09/28/22 07:50 | 09/29/22 14:01 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND        |           | 1.7      | 0.43 | ng/L |   | 09/28/22 07:50 | 09/29/22 14:01 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 94        |           | 31 - 182 |      |      |   | 09/28/22 07:50 | 09/29/22 14:01 | 1       |
| 13C8 PFOA                            | 91        |           | 48 - 162 |      |      |   | 09/28/22 07:50 | 09/29/22 14:01 | 1       |
| 13C9 PFNA                            | 99        |           | 51 - 167 |      |      |   | 09/28/22 07:50 | 09/29/22 14:01 | 1       |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98355-1

**Client Sample ID: 52-66\_POET\_Post\_20220916**

**Lab Sample ID: 410-98355-3**

Date Collected: 09/16/22 09:38

Matrix: Water

Date Received: 09/17/22 10:24

**Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)**

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C3 PFHxS       | 96        |           | 28 - 188 | 09/28/22 07:50 | 09/29/22 14:01 | 1       |
| 13C8 PFOS        | 98        |           | 51 - 159 | 09/28/22 07:50 | 09/29/22 14:01 | 1       |
| 13C6 PFDA        | 90        |           | 49 - 163 | 09/28/22 07:50 | 09/29/22 14:01 | 1       |

**Method: EPA 537 IDA - EPA 537 Isotope Dilution - RE**

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 112       |           | 31 - 182 | 10/03/22 10:25 | 10/06/22 22:55 | 1       |
| 13C8 PFOA        | 108       |           | 48 - 162 | 10/03/22 10:25 | 10/06/22 22:55 | 1       |
| 13C9 PFNA        | 124       |           | 51 - 167 | 10/03/22 10:25 | 10/06/22 22:55 | 1       |
| 13C3 PFHxS       | 113       |           | 28 - 188 | 10/03/22 10:25 | 10/06/22 22:55 | 1       |
| 13C8 PFOS        | 121       |           | 51 - 159 | 10/03/22 10:25 | 10/06/22 22:55 | 1       |
| 13C6 PFDA        | 109       |           | 49 - 163 | 10/03/22 10:25 | 10/06/22 22:55 | 1       |

**Client Sample ID: FB-01\_20220916**

**Lab Sample ID: 410-98355-4**

Date Collected: 09/16/22 09:00

Matrix: Water

Date Received: 09/17/22 10:24

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 1.7 | 0.42 | ng/L |   | 09/26/22 17:42 | 09/28/22 02:42 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 1.7 | 0.42 | ng/L |   | 09/26/22 17:42 | 09/28/22 02:42 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 1.7 | 0.42 | ng/L |   | 09/26/22 17:42 | 09/28/22 02:42 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 1.7 | 0.42 | ng/L |   | 09/26/22 17:42 | 09/28/22 02:42 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 1.7 | 0.84 | ng/L |   | 09/26/22 17:42 | 09/28/22 02:42 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 1.7 | 0.42 | ng/L |   | 09/26/22 17:42 | 09/28/22 02:42 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 98        |           | 31 - 182 | 09/26/22 17:42 | 09/28/22 02:42 | 1       |
| 13C8 PFOA        | 94        |           | 48 - 162 | 09/26/22 17:42 | 09/28/22 02:42 | 1       |
| 13C9 PFNA        | 106       |           | 51 - 167 | 09/26/22 17:42 | 09/28/22 02:42 | 1       |
| 13C3 PFHxS       | 94        |           | 28 - 188 | 09/26/22 17:42 | 09/28/22 02:42 | 1       |
| 13C8 PFOS        | 101       |           | 51 - 159 | 09/26/22 17:42 | 09/28/22 02:42 | 1       |
| 13C6 PFDA        | 90        |           | 49 - 163 | 09/26/22 17:42 | 09/28/22 02:42 | 1       |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98355-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID         | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|--------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                          | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-98355-1        | 52-66_POET_Pre_20220916  | 96  | 93                 | 103                | 100                | 104                | 87                 |
| 410-98355-2        | 52-66_POET_Mid_20220916  | 93  | 93                 | 101                | 93                 | 99                 | 86                 |
| 410-98355-3        | 52-66_POET_Post_20220916 | 94  | 91                 | 99                 | 96                 | 98                 | 90                 |
| 410-98355-3 - RE   | 52-66_POET_Post_20220916 | 112   | 108                | 124                | 113                | 121                | 109                |
| 410-98355-4        | FB-01_20220916           | 98  | 94                 | 106                | 94                 | 101                | 90                 |
| LCS 410-299959/2-A | Lab Control Sample       | 105   | 103                | 113                | 105                | 108                | 96                 |
| LCS 410-300646/3-A | Lab Control Sample       | 97  | 94                 | 100                | 104                | 102                | 87                 |
| LCS 410-302412/2-A | Lab Control Sample       | 121   | 117                | 125                | 118                | 118                | 111                |
| MB 410-299959/1-A  | Method Blank             | 96  | 93                 | 107                | 96                 | 102                | 92                 |
| MB 410-300646/1-A  | Method Blank             | 102   | 95                 | 101                | 100                | 108                | 93                 |
| MB 410-302412/1-A  | Method Blank             | 124   | 118                | 129                | 115                | 120                | 113                |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98355-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-299959/1-A**  
**Matrix: Water**  
**Analysis Batch: 300157**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 299959**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 1.0  | ng/L |   | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/26/22 17:42 | 09/28/22 00:51 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 96        |           | 31 - 182 | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| 13C8 PFOA        | 93        |           | 48 - 162 | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| 13C9 PFNA        | 107       |           | 51 - 167 | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| 13C3 PFHxS       | 96        |           | 28 - 188 | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| 13C8 PFOS        | 102       |           | 51 - 159 | 09/26/22 17:42 | 09/28/22 00:51 | 1       |
| 13C6 PFDA        | 92        |           | 49 - 163 | 09/26/22 17:42 | 09/28/22 00:51 | 1       |

**Lab Sample ID: LCS 410-299959/2-A**  
**Matrix: Water**  
**Analysis Batch: 300157**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 299959**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 30.0       |               | ng/L |   | 117  | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 29.7       |               | ng/L |   | 116  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 27.1       |               | ng/L |   | 116  | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 26.8       |               | ng/L |   | 113  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 30.8       |               | ng/L |   | 120  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 105       |           | 31 - 182 |
| 13C8 PFOA        | 103       |           | 48 - 162 |
| 13C9 PFNA        | 113       |           | 51 - 167 |
| 13C3 PFHxS       | 105       |           | 28 - 188 |
| 13C8 PFOS        | 108       |           | 51 - 159 |
| 13C6 PFDA        | 96        |           | 49 - 163 |

**Lab Sample ID: MB 410-300646/1-A**  
**Matrix: Water**  
**Analysis Batch: 301167**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 300646**

| Analyte                              | MB     | MB        | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 09/28/22 07:50 | 09/29/22 11:48 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/28/22 07:50 | 09/29/22 11:48 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/28/22 07:50 | 09/29/22 11:48 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 09/28/22 07:50 | 09/29/22 11:48 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 1.0  | ng/L |   | 09/28/22 07:50 | 09/29/22 11:48 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 09/28/22 07:50 | 09/29/22 11:48 | 1       |

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98355-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| Isotope Dilution | MB MB     |           | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 102       |           | 31 - 182 | 09/28/22 07:50 | 09/29/22 11:48 | 1       |
| 13C8 PFOA        | 95        |           | 48 - 162 | 09/28/22 07:50 | 09/29/22 11:48 | 1       |
| 13C9 PFNA        | 101       |           | 51 - 167 | 09/28/22 07:50 | 09/29/22 11:48 | 1       |
| 13C3 PFHxS       | 100       |           | 28 - 188 | 09/28/22 07:50 | 09/29/22 11:48 | 1       |
| 13C8 PFOS        | 108       |           | 51 - 159 | 09/28/22 07:50 | 09/29/22 11:48 | 1       |
| 13C6 PFDA        | 93        |           | 49 - 163 | 09/28/22 07:50 | 09/29/22 11:48 | 1       |

Lab Sample ID: LCS 410-300646/3-A  
Matrix: Water  
Analysis Batch: 301167

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 300646

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 24.9       |               | ng/L |   | 97   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 26.1       |               | ng/L |   | 102  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 21.8       |               | ng/L |   | 93   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 22.9       |               | ng/L |   | 97   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 27.2       |               | ng/L |   | 106  | 56 - 138    |

| Isotope Dilution | LCS LCS   |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 97        |           | 31 - 182 |
| 13C8 PFOA        | 94        |           | 48 - 162 |
| 13C9 PFNA        | 100       |           | 51 - 167 |
| 13C3 PFHxS       | 104       |           | 28 - 188 |
| 13C8 PFOS        | 102       |           | 51 - 159 |
| 13C6 PFDA        | 87        |           | 49 - 163 |

Lab Sample ID: MB 410-302412/1-A  
Matrix: Water  
Analysis Batch: 303745

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 302412

| Analyte                              | MB MB  |           | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |      |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | ND     |           | 2.0 | 0.50 | ng/L |   | 10/03/22 10:25 | 10/06/22 22:32 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 10/03/22 10:25 | 10/06/22 22:32 | 1       |
| Perfluorononanoic acid (PFNA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 10/03/22 10:25 | 10/06/22 22:32 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND     |           | 2.0 | 0.50 | ng/L |   | 10/03/22 10:25 | 10/06/22 22:32 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND     |           | 2.0 | 1.0  | ng/L |   | 10/03/22 10:25 | 10/06/22 22:32 | 1       |
| Perfluorodecanoic acid (PFDA)        | ND     |           | 2.0 | 0.50 | ng/L |   | 10/03/22 10:25 | 10/06/22 22:32 | 1       |

| Isotope Dilution | MB MB     |           | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 124       |           | 31 - 182 | 10/03/22 10:25 | 10/06/22 22:32 | 1       |
| 13C8 PFOA        | 118       |           | 48 - 162 | 10/03/22 10:25 | 10/06/22 22:32 | 1       |
| 13C9 PFNA        | 129       |           | 51 - 167 | 10/03/22 10:25 | 10/06/22 22:32 | 1       |
| 13C3 PFHxS       | 115       |           | 28 - 188 | 10/03/22 10:25 | 10/06/22 22:32 | 1       |
| 13C8 PFOS        | 120       |           | 51 - 159 | 10/03/22 10:25 | 10/06/22 22:32 | 1       |
| 13C6 PFDA        | 113       |           | 49 - 163 | 10/03/22 10:25 | 10/06/22 22:32 | 1       |

# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98355-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-302412/2-A

Matrix: Water

Analysis Batch: 303745

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 302412

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 23.2       |               | ng/L |   | 91   | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 22.1       |               | ng/L |   | 87   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 22.6       |               | ng/L |   | 88   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 20.3       |               | ng/L |   | 87   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 20.1       |               | ng/L |   | 85   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 23.9       |               | ng/L |   | 93   | 56 - 138    |

| Isotope Dilution | LCS LCS   |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 121       |           | 31 - 182 |
| 13C8 PFOA        | 117       |           | 48 - 162 |
| 13C9 PFNA        | 125       |           | 51 - 167 |
| 13C3 PFHxS       | 118       |           | 28 - 188 |
| 13C8 PFOS        | 118       |           | 51 - 159 |
| 13C6 PFDA        | 111       |           | 49 - 163 |

# QC Association Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98355-1

## LCMS

### Prep Batch: 299959

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-98355-4        | FB-01_20220916     | Total/NA  | Water  | 537 IDA |            |
| MB 410-299959/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA |            |
| LCS 410-299959/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 300157

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------|-----------|--------|---------|------------|
| 410-98355-4        | FB-01_20220916     | Total/NA  | Water  | 537 IDA | 299959     |
| MB 410-299959/1-A  | Method Blank       | Total/NA  | Water  | 537 IDA | 299959     |
| LCS 410-299959/2-A | Lab Control Sample | Total/NA  | Water  | 537 IDA | 299959     |

### Prep Batch: 300646

| Lab Sample ID      | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------------|-----------|--------|---------|------------|
| 410-98355-1        | 52-66_POET_Pre_20220916  | Total/NA  | Water  | 537 IDA |            |
| 410-98355-2        | 52-66_POET_Mid_20220916  | Total/NA  | Water  | 537 IDA |            |
| 410-98355-3        | 52-66_POET_Post_20220916 | Total/NA  | Water  | 537 IDA |            |
| MB 410-300646/1-A  | Method Blank             | Total/NA  | Water  | 537 IDA |            |
| LCS 410-300646/3-A | Lab Control Sample       | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 301167

| Lab Sample ID      | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------------|-----------|--------|---------|------------|
| 410-98355-1        | 52-66_POET_Pre_20220916  | Total/NA  | Water  | 537 IDA | 300646     |
| 410-98355-2        | 52-66_POET_Mid_20220916  | Total/NA  | Water  | 537 IDA | 300646     |
| 410-98355-3        | 52-66_POET_Post_20220916 | Total/NA  | Water  | 537 IDA | 300646     |
| MB 410-300646/1-A  | Method Blank             | Total/NA  | Water  | 537 IDA | 300646     |
| LCS 410-300646/3-A | Lab Control Sample       | Total/NA  | Water  | 537 IDA | 300646     |

### Prep Batch: 302412

| Lab Sample ID      | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------------|-----------|--------|---------|------------|
| 410-98355-3 - RE   | 52-66_POET_Post_20220916 | Total/NA  | Water  | 537 IDA |            |
| MB 410-302412/1-A  | Method Blank             | Total/NA  | Water  | 537 IDA |            |
| LCS 410-302412/2-A | Lab Control Sample       | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 303745

| Lab Sample ID      | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|--------------------|--------------------------|-----------|--------|---------|------------|
| 410-98355-3 - RE   | 52-66_POET_Post_20220916 | Total/NA  | Water  | 537 IDA | 302412     |
| MB 410-302412/1-A  | Method Blank             | Total/NA  | Water  | 537 IDA | 302412     |
| LCS 410-302412/2-A | Lab Control Sample       | Total/NA  | Water  | 537 IDA | 302412     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98355-1

**Client Sample ID: 52-66\_POET\_Pre\_20220916**

**Lab Sample ID: 410-98355-1**

Date Collected: 09/16/22 09:32

Matrix: Water

Date Received: 09/17/22 10:24

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 300646       | RC3V          | ELLE | 09/28/22 07:50       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 301167       | ZG8V          | ELLE | 09/29/22 13:38       |

**Client Sample ID: 52-66\_POET\_Mid\_20220916**

**Lab Sample ID: 410-98355-2**

Date Collected: 09/16/22 09:35

Matrix: Water

Date Received: 09/17/22 10:24

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 300646       | RC3V          | ELLE | 09/28/22 07:50       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 301167       | ZG8V          | ELLE | 09/29/22 13:50       |

**Client Sample ID: 52-66\_POET\_Post\_20220916**

**Lab Sample ID: 410-98355-3**

Date Collected: 09/16/22 09:38

Matrix: Water

Date Received: 09/17/22 10:24

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 300646       | RC3V          | ELLE | 09/28/22 07:50       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 301167       | ZG8V          | ELLE | 09/29/22 14:01       |
| Total/NA  | Prep       | 537 IDA      | RE  |                 | 302412       | D5VP          | ELLE | 10/03/22 10:25       |
| Total/NA  | Analysis   | 537 IDA      | RE  | 1               | 303745       | PY4D          | ELLE | 10/06/22 22:55       |

**Client Sample ID: FB-01\_20220916**

**Lab Sample ID: 410-98355-4**

Date Collected: 09/16/22 09:00

Matrix: Water

Date Received: 09/17/22 10:24

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 299959       | GMZ5          | ELLE | 09/26/22 17:42       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 300157       | ZG8V          | ELLE | 09/28/22 02:42       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98355-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98355-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS 5197.01

Job ID: 410-98355-1

| Lab Sample ID | Client Sample ID         | Matrix | Collected      | Received       |
|---------------|--------------------------|--------|----------------|----------------|
| 410-98355-1   | 52-66_POET_Pre_20220916  | Water  | 09/16/22 09:32 | 09/17/22 10:24 |
| 410-98355-2   | 52-66_POET_Mid_20220916  | Water  | 09/16/22 09:35 | 09/17/22 10:24 |
| 410-98355-3   | 52-66_POET_Post_20220916 | Water  | 09/16/22 09:38 | 09/17/22 10:24 |
| 410-98355-4   | FB-01_20220916           | Water  | 09/16/22 09:00 | 09/17/22 10:24 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15





Lancaster Laboratories  
Environmental

# Environmental



410-98355 Chain of Custody

# Chain of Custody

Acct. # \_\_\_\_\_

| Client: <b>Sanborn Head &amp; Associates</b>                 |   | Matrix   |  | Analyses Requested   |           |         |       |                          |   | For Lab Use Only                                 |      |   |  |
|--|---|--|--|--|-----------|---------|-------|--------------------------|---|--|------|---|--|
| Project Name#: N. Monmouth PFAS 5197.01                      |   | Site ID #:   |  | Preservation and Filtration Codes  |           |         |       |                          |   | SF #: _____                                      |      |   |  |
| Project Manager: Andrew Buchy                                |   | P.O. #: 5197.01  |  | <input type="checkbox"/> Tissue <input type="checkbox"/> Ground <input type="checkbox"/> Surface<br><input type="checkbox"/> Sediment <input type="checkbox"/> Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Field Blank<br><input type="checkbox"/> Soil <input type="checkbox"/> Water <input type="checkbox"/> Other: _____ |           |         |       |                          |   | SCR #: _____                                     |      |   |  |
| Sampler: Don Kelsey  |   | PWSID #:   |  |  |           |         |       |                          |   | Total # of Containers                            |      | Remarks   |  |
| Phone #: 603-229-1900  |   | Quote #:   |  |  |           |         |       |                          |   | PFAS 537 Mod with isotope dilution (6 compounds) |      | Preservation Codes<br>H = HCl      T = Thiosulfate<br>N = HNO <sub>3</sub> B = NaOH<br>S = H <sub>2</sub> SO <sub>4</sub> P = H <sub>3</sub> PO <sub>4</sub><br>F = Field Filtered    O = Other |  |
| State where samples were collected: ME                       |   | For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>   |  |  |           |         |       |                          |   |  |      |   |  |
| Sample Identification  |   | Date   | Time   | Grab   | Composite |         |       |                          |   |  |      |   |  |
| 52-66_POET_Pre_202209 1b                                     |   | 9/16/22  | 9:32   | X  |           | X       | 4     | X                        |   |  |      |   |  |
| 52-66_POET_Mid_202209 1b                                     |   | ↓  | 9:35   | X  |           | X       | 2     | X                        |   |  |      |   |  |
| 52-66_POET_Post_202209 1b                                    |   | ↓  | 9:38   | X  |           | X       | 2     | X                        |   |  |      |   |  |
| FB-01_202209 1b  |   |  | 9:00   | X  |           |         | X     | 2                        | X |  |      |   |  |
| Turnaround Time Requested (TAT) (please check):              |   | Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |  | Relinquished by: <i>[Signature]</i>  |           | Date    | Time  | Received by:             |   | Date   | Time |   |  |
| (Rush TAT is subject to laboratory approval and surcharges.) |   |  |  |  |           | 7/14/22 | 6:05P |                          |   |  |      |   |  |
| Date results are needed:                                     |   |  |  | Relinquished by:   |           | Date    | Time  | Received by:             |   | Date   | Time |   |  |
| Rush results requested by (please check):                    |   | E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>             |  | Relinquished by:   |           | Date    | Time  | Received by:             |   | Date   | Time |   |  |
| E-mail Address:  |   |  |  | Relinquished by:   |           | Date    | Time  | Received by:             |   | Date   | Time |   |  |
| Phone:   |   |  |  | Relinquished by:   |           | Date    | Time  | Received by:             |   | Date   | Time |   |  |
| Data Package Options (please check if required)              |   |  |  | Relinquished by:   |           | Date    | Time  | Received by:             |   | Date   | Time |   |  |
| Level I  | <input type="checkbox"/>  | MA MCP   | <input type="checkbox"/>                                 | Relinquished by:   |           | Date    | Time  | Received by:             |   | Date   | Time |   |  |
| Level II   | <input checked="" type="checkbox"/>                                 | CT RCP   | <input type="checkbox"/>                                 | Relinquished by:   |           | Date    | Time  | Received by:             |   | Date   | Time |   |  |
| Level VI   | <input type="checkbox"/>  | TX TRRP-13   | <input type="checkbox"/>                                 | Relinquished by:   |           | Date    | Time  | Received by:             |   | Date   | Time |   |  |
| NJ DKQP  | <input type="checkbox"/>  | NYSDEC Category  | <input type="checkbox"/> A or <input type="checkbox"/> B | Relinquished by Commercial Carrier:  |           |         |       | Temperature upon receipt |   | 4.1 °C   |      |   |  |
| EQUS 4-file format/SHA                                       |   |  |  |  |           |         |       |                          |   |  |      |   |  |
| EDD Required?  | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | If yes, format: Standard (flat file)                                       |  | UPS _____ FedEx <input checked="" type="checkbox"/> Other _____  |           |         |       |                          |   |  |      |   |  |

*SMM*

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15

## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-98355-1

Login Number: 98355

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: McBeth, Jessica

| Question   | Answer | Comment      |
|--|--------|--------------|
| The cooler's custody seal is intact.   | True   |              |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |              |
| Samples were received on ice.  | True   |              |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |              |
| Cooler Temperature is recorded.  | True   |              |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |              |
| WV: Container Temperature is recorded.   | N/A    |              |
| COC is present.  | True   |              |
| COC is filled out in ink and legible.  | True   |              |
| COC is filled out with all pertinent information.                                    | True   |              |
| There are no discrepancies between the containers received and the COC.              | True   |              |
| Sample containers have legible labels.   | True   |              |
| Containers are not broken or leaking.  | True   |              |
| Sample collection date/times are provided.   | True   |              |
| Appropriate sample containers are used.  | True   |              |
| Sample bottles are completely filled.  | True   |              |
| There is sufficient vol. for all requested analyses.                                 | True   |              |
| Is the Field Sampler's name present on COC?  | True   |              |
| Sample custody seals are intact.   | N/A    | Not present. |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |              |



## ANALYTICAL REPORT

|                 |  |
|-----------------|--|
| Lab Number:     | L2259157   |
| Client:         | Sanborn, Head & Associates, Inc.<br>20 Foundry Street<br>Concord, NH 03301 |
| ATTN:           | Andrew Buchy   |
| Phone:          | (603) 229-1900   |
| Project Name:   | N.MONMOUTH PFAS  |
| Project Number: | 5197.01  |
| Report Date:    | 11/29/22   |

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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

---

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



**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259157  
**Report Date:** 11/29/22

| <b>Alpha<br/>Sample ID</b> | <b>Client ID</b>         | <b>Matrix</b> | <b>Sample<br/>Location</b> | <b>Collection<br/>Date/Time</b> | <b>Receive Date</b> |
|----------------------------|--------------------------|---------------|----------------------------|---------------------------------|---------------------|
| L2259157-01                | 52-67_POET_PRE_20221020  | WATER         | N.MONMOUTH, ME             | 10/20/22 13:55                  | 10/21/22            |
| L2259157-02                | 52-67_POET_MID_20221020  | WATER         | N.MONMOUTH, ME             | 10/20/22 13:57                  | 10/21/22            |
| L2259157-03                | 52-67_POET_POST_20221020 | WATER         | N.MONMOUTH, ME             | 10/20/22 14:00                  | 10/21/22            |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259157  
**Report Date:** 11/29/22

### 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259157  
**Report Date:** 11/29/22

### Case Narrative (continued)

#### Perfluorinated Alkyl Acids by Isotope Dilution

L2259157-01, -02, and -03: Sample results for Perfluorohexanesulfonic Acid (PFHxS), Perfluorooctanoic Acid (PFOA), and Perfluorooctanesulfonic Acid (PFOS) are reported as the sum of the branched and linear isomers.

L2259157-03: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

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

Authorized Signature:  Ashley Boucher

Title: Technical Director/Representative

Date: 11/29/22

# ORGANICS

# SEMIVOLATILES



**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259157  
**Report Date:** 11/29/22

**SAMPLE RESULTS**

**Lab ID:** L2259157-01  
**Client ID:** 52-67\_POET\_PRE\_20221020  
**Sample Location:** N.MONMOUTH, ME

**Date Collected:** 10/20/22 13:55  
**Date Received:** 10/21/22  
**Field Prep:** Not Specified

**Sample Depth:**

**Matrix:** Water  
**Analytical Method:** 134,LCMSMS-ID  
**Analytical Date:** 11/23/22 18:45  
**Analyst:** SL

**Extraction Method:** ALPHA 23528  
**Extraction Date:** 11/02/22 09:15

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | 23.5   |           | ng/l  | 1.75 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | 5.22   |           | ng/l  | 1.75 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | 118    |           | ng/l  | 1.75 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | 4.07   |           | ng/l  | 1.75 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 139    |           | ng/l  | 1.75 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.75 | --  | 1               |
| PFAS, Total (6)   | 290    |           | ng/l  | 1.75 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 83         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 92         |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 72         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 66         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 86         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 70         |           | 62-124              |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259157  
**Report Date:** 11/29/22

**SAMPLE RESULTS**

**Lab ID:** L2259157-02  
**Client ID:** 52-67\_POET\_MID\_20221020  
**Sample Location:** N.MONMOUTH, ME

**Date Collected:** 10/20/22 13:57  
**Date Received:** 10/21/22  
**Field Prep:** Not Specified

**Sample Depth:**

**Matrix:** Water  
**Analytical Method:** 134,LCMSMS-ID  
**Analytical Date:** 11/23/22 19:01  
**Analyst:** SL

**Extraction Method:** ALPHA 23528  
**Extraction Date:** 11/02/22 09:15

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.73 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.73 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.73 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.73 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 13.6   |           | ng/l  | 1.73 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.73 | --  | 1               |
| PFAS, Total (6)   | 13.6   |           | ng/l  | 1.73 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 81         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 91         |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 78         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 76         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 89         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 73         |           | 62-124              |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259157  
**Report Date:** 11/29/22

**SAMPLE RESULTS**

Lab ID: L2259157-03  
 Client ID: 52-67\_POET\_POST\_20221020  
 Sample Location: N.MONMOUTH, ME

Date Collected: 10/20/22 14:00  
 Date Received: 10/21/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/23/22 19:18  
 Analyst: SL

Extraction Method: ALPHA 23528  
 Extraction Date: 11/02/22 09:15

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.74 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.74 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.74 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.74 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | ND     |           | ng/l  | 1.74 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.74 | --  | 1               |
| PFAS, Total (6)   | ND     |           | ng/l  | 1.74 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 78         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 68         | Q         | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 89         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 103        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 95         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 82         |           | 62-124              |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259157  
**Report Date:** 11/29/22

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 11/08/22 20:48  
Analyst: AC

Extraction Method: ALPHA 23528  
Extraction Date: 11/02/22 09:15

| Parameter  | Result | Qualifier | Units | RL   | MDL |
|--|--------|-----------|-------|------|-----|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1706997-1 |        |           |       |      |     |
| Perfluoroheptanoic Acid (PFHpA)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorohexanesulfonic Acid (PFHxS)   | ND     |           | ng/l  | 2.00 | --  |
| Perfluorooctanoic Acid (PFOA)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorononanoic Acid (PFNA)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorooctanesulfonic Acid (PFOS)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorodecanoic Acid (PFDA)  | ND     |           | ng/l  | 2.00 | --  |
| PFAS, Total (6)  | ND     |           | ng/l  | 2.00 | --  |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259157  
**Report Date:** 11/29/22

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 11/08/22 20:48  
Analyst: AC

Extraction Method: ALPHA 23528  
Extraction Date: 11/02/22 09:15

| Parameter  | Result | Qualifier | Units | RL | MDL |
|--|--------|-----------|-------|----|-----|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1706997-1 |        |           |       |    |     |

| Surrogate (Extracted Internal Standard)  | %Recovery | Qualifier | Acceptance Criteria |
|--|-----------|-----------|---------------------|
| Perfluoro[13C4]Butanoic Acid (MPFBA)   | 92        |           | 58-132              |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)  | 95        |           | 62-163              |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)  | 98        |           | 70-131              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 96        |           | 12-142              |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 88        |           | 57-129              |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 89        |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 101       |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)  | 98        |           | 62-129              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 90        |           | 14-147              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)  | 91        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)  | 99        |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 86        |           | 62-124              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 109       |           | 10-162              |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | 53        |           | 24-116              |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | 82        |           | 55-137              |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)  | 46        |           | 5-112               |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 53        |           | 27-126              |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 74        |           | 48-131              |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | 66        |           | 22-136              |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 80        |           | 10-165              |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 32        |           | 10-206              |
| 1H,1H,2H,2H-Perfluorododecane Sulfonate (M2D4-10:2FTS)                                   | 112       |           | 50-150              |

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** N.MONMOUTH PFAS

**Project Number:** 5197.01

**Lab Number:** L2259157

**Report Date:** 11/29/22

| <b>Parameter</b>  | <b>LCS<br/>%Recovery</b> | <b>Qual</b> | <b>LCSD<br/>%Recovery</b> | <b>Qual</b> | <b>%Recovery<br/>Limits</b> | <b>RPD</b> | <b>Qual</b> | <b>RPD<br/>Limits</b> |
|---|--------------------------|-------------|---------------------------|-------------|-----------------------------|------------|-------------|-----------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1706997-2 |                          |             |                           |             |                             |            |             |                       |
| Perfluoroheptanoic Acid (PFHpA)   | 105                      |             | -                         |             | 58-159                      | -          |             | 30                    |
| Perfluorohexanesulfonic Acid (PFHxS)  | 109                      |             | -                         |             | 69-177                      | -          |             | 30                    |
| Perfluorooctanoic Acid (PFOA)   | 96                       |             | -                         |             | 63-159                      | -          |             | 30                    |
| Perfluorononanoic Acid (PFNA)   | 97                       |             | -                         |             | 68-171                      | -          |             | 30                    |
| Perfluorooctanesulfonic Acid (PFOS)   | 112                      |             | -                         |             | 52-151                      | -          |             | 30                    |
| Perfluorodecanoic Acid (PFDA)   | 97                       |             | -                         |             | 63-171                      | -          |             | 30                    |

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259157  
**Report Date:** 11/29/22

| Parameter   | LCS       |      | LCSD      |      | %Recovery |      | RPD | RPD    |  |
|---|-----------|------|-----------|------|-----------|------|-----|--------|--|
|   | %Recovery | Qual | %Recovery | Qual | Limits    | Qual |     | Limits |  |
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1706997-2 |           |      |           |      |           |      |     |        |  |

| Surrogate (Extracted Internal Standard)  | LCS       |      | LCSD      |      | Acceptance<br>Criteria |
|--|-----------|------|-----------|------|------------------------|
|  | %Recovery | Qual | %Recovery | Qual |                        |
| Perfluoro[13C4]Butanoic Acid (MPFBA)   | 94        |      |           |      | 58-132                 |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)  | 97        |      |           |      | 62-163                 |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)  | 100       |      |           |      | 70-131                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 99        |      |           |      | 12-142                 |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 89        |      |           |      | 57-129                 |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 89        |      |           |      | 60-129                 |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 99        |      |           |      | 71-134                 |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)  | 100       |      |           |      | 62-129                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 91        |      |           |      | 14-147                 |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)  | 93        |      |           |      | 59-139                 |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)  | 98        |      |           |      | 69-131                 |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 96        |      |           |      | 62-124                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 109       |      |           |      | 10-162                 |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | 56        |      |           |      | 24-116                 |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | 83        |      |           |      | 55-137                 |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)  | 50        |      |           |      | 5-112                  |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 52        |      |           |      | 27-126                 |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 80        |      |           |      | 48-131                 |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | 74        |      |           |      | 22-136                 |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 76        |      |           |      | 10-165                 |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 44        |      |           |      | 10-206                 |
| 1H,1H,2H,2H-Perfluorododecane Sulfonate (M2D4-10:2FTS)                                   | 104       |      |           |      | 50-150                 |

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259157  
**Report Date:** 11/29/22

| <i>Parameter</i>  | <i>Native Sample</i> | <i>MS Added</i> | <i>MS Found</i> | <i>MS %Recovery</i> | <i>Qual</i> | <i>MSD Found</i> | <i>MSD %Recovery</i> | <i>Qual</i> | <i>Recovery Limits</i> | <i>RPD</i> | <i>Qual</i> | <i>RPD Limits</i> |
|---|----------------------|-----------------|-----------------|---------------------|-------------|------------------|----------------------|-------------|------------------------|------------|-------------|-------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1706997-3 QC Sample: L2259006-01 Client ID: MS Sample |                      |                 |                 |                     |             |                  |                      |             |                        |            |             |                   |
| Perfluorobutanoic Acid (PFBA)   | 72.9                 | 37.8            | 111             | 101                 |             | -                | -                    |             | 67-148                 | -          |             | 30                |
| Perfluoropentanoic Acid (PFPeA)   | 91.4                 | 37.8            | 130             | 102                 |             | -                | -                    |             | 63-161                 | -          |             | 30                |
| Perfluorobutanesulfonic Acid (PFBS)   | 17.2                 | 33.6            | 52.5            | 105                 |             | -                | -                    |             | 65-157                 | -          |             | 30                |
| 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)   | ND                   | 35.5            | 39.1            | 110                 |             | -                | -                    |             | 37-219                 | -          |             | 30                |
| Perfluorohexanoic Acid (PFHxA)  | 133                  | 37.8            | 174             | 108                 |             | -                | -                    |             | 69-168                 | -          |             | 30                |
| Perfluoropentanesulfonic Acid (PFPeS)   | 3.07                 | 35.6            | 38.8            | 100                 |             | -                | -                    |             | 52-156                 | -          |             | 30                |
| Perfluoroheptanoic Acid (PFHpA)   | 57.8                 | 37.8            | 96.6            | 103                 |             | -                | -                    |             | 58-159                 | -          |             | 30                |
| Perfluorohexanesulfonic Acid (PFHxS)  | 24.8                 | 34.6            | 63.4            | 112                 |             | -                | -                    |             | 69-177                 | -          |             | 30                |
| Perfluorooctanoic Acid (PFOA)   | 115                  | 37.8            | 154             | 103                 |             | -                | -                    |             | 63-159                 | -          |             | 30                |
| 1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)   | 3.66                 | 36              | 43.1            | 110                 |             | -                | -                    |             | 49-187                 | -          |             | 30                |
| Perfluoroheptanesulfonic Acid (PFHpS)   | ND                   | 36.1            | 36.1            | 100                 |             | -                | -                    |             | 61-179                 | -          |             | 30                |
| Perfluorononanoic Acid (PFNA)   | 7.10                 | 37.8            | 43.4            | 96                  |             | -                | -                    |             | 68-171                 | -          |             | 30                |
| Perfluorooctanesulfonic Acid (PFOS)   | 18.0                 | 35.1            | 56.0            | 108                 |             | -                | -                    |             | 52-151                 | -          |             | 30                |
| Perfluorodecanoic Acid (PFDA)   | 4.38                 | 37.8            | 41.2            | 97                  |             | -                | -                    |             | 63-171                 | -          |             | 30                |
| 1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)   | ND                   | 36.3            | 42.3            | 116                 |             | -                | -                    |             | 56-173                 | -          |             | 30                |
| Perfluorononanesulfonic Acid (PFNS)   | ND                   | 36.4            | 33.2            | 91                  |             | -                | -                    |             | 48-150                 | -          |             | 30                |
| N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)   | ND                   | 37.8            | 39.0            | 103                 |             | -                | -                    |             | 60-166                 | -          |             | 30                |
| Perfluoroundecanoic Acid (PFUnA)  | ND                   | 37.8            | 49.5            | 131                 |             | -                | -                    |             | 60-153                 | -          |             | 30                |
| Perfluorodecanesulfonic Acid (PFDS)   | ND                   | 36.5            | 30.4            | 83                  |             | -                | -                    |             | 38-156                 | -          |             | 30                |
| Perfluorooctanesulfonamide (FOSA)   | ND                   | 37.8            | 36.8F           | 97                  |             | -                | -                    |             | 46-170                 | -          |             | 30                |
| N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)  | ND                   | 37.8            | 46.1            | 118                 |             | -                | -                    |             | 45-170                 | -          |             | 30                |
| Perfluorododecanoic Acid (PFDoA)  | ND                   | 37.8            | 36.9            | 98                  |             | -                | -                    |             | 67-153                 | -          |             | 30                |



## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** N.MONMOUTH PFAS

**Project Number:** 5197.01

**Lab Number:** L2259157

**Report Date:** 11/29/22

| <i>Parameter</i>  | <i>Native Sample</i> | <i>MS Added</i> | <i>MS Found</i> | <i>MS %Recovery</i> | <i>Qual</i> | <i>MSD Found</i> | <i>MSD %Recovery</i> | <i>Qual</i> | <i>Recovery Limits</i> | <i>RPD</i> | <i>Qual</i> | <i>RPD Limits</i> |
|---|----------------------|-----------------|-----------------|---------------------|-------------|------------------|----------------------|-------------|------------------------|------------|-------------|-------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1706997-3 QC Sample: L2259006-01 Client ID: MS Sample |                      |                 |                 |                     |             |                  |                      |             |                        |            |             |                   |
| Perfluorotridecanoic Acid (PFTTrDA)   | ND                   | 37.8            | 41.4            | 109                 |             | -                | -                    |             | 48-158                 | -          |             | 30                |
| Perfluorotetradecanoic Acid (PFTTA)   | ND                   | 37.8            | 43.4            | 115                 |             | -                | -                    |             | 59-182                 | -          |             | 30                |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)   | ND                   | 369             | 380F            | 103                 |             | -                | -                    |             | 57-162                 | -          |             | 30                |
| 4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)   | ND                   | 35.8            | 29.2            | 82                  |             | -                | -                    |             | 69-143                 | -          |             | 30                |
| Perfluorohexadecanoic Acid (PFHxDA)   | ND                   | 37.8            | 47.9            | 127                 |             | -                | -                    |             | 40-167                 | -          |             | 30                |
| Perfluorooctadecanoic Acid (PFODA)  | ND                   | 37.8            | 52.7            | 139                 | Q           | -                | -                    |             | 10-119                 | -          |             | 30                |

| <i>Surrogate (Extracted Internal Standard)</i>   | <i>MS % Recovery</i> | <i>Qualifier</i> | <i>MSD % Recovery</i> | <i>Qualifier</i> | <i>Acceptance Criteria</i> |
|--|----------------------|------------------|-----------------------|------------------|----------------------------|
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 141                  |                  |                       |                  | 10-162                     |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 171                  | Q                |                       |                  | 12-142                     |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 171                  | Q                |                       |                  | 14-147                     |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 69                   |                  |                       |                  | 10-165                     |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 39                   |                  |                       |                  | 27-126                     |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | 47                   |                  |                       |                  | 24-116                     |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | 71                   |                  |                       |                  | 55-137                     |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 81                   |                  |                       |                  | 62-124                     |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 63                   |                  |                       |                  | 57-129                     |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 72                   |                  |                       |                  | 60-129                     |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 91                   |                  |                       |                  | 71-134                     |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 56                   |                  |                       |                  | 48-131                     |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | 61                   |                  |                       |                  | 22-136                     |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 32                   |                  |                       |                  | 10-206                     |

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259157  
**Report Date:** 11/29/22

| <i>Parameter</i>  | <i>Native Sample</i> | <i>MS Added</i> | <i>MS Found</i> | <i>MS %Recovery</i> | <i>Qual</i> | <i>MSD Found</i> | <i>MSD %Recovery</i> | <i>Qual</i> | <i>Recovery Limits</i> | <i>RPD</i> | <i>Qual</i> | <i>RPD Limits</i> |
|---|----------------------|-----------------|-----------------|---------------------|-------------|------------------|----------------------|-------------|------------------------|------------|-------------|-------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1706997-3 QC Sample: L2259006-01 Client ID: MS Sample |                      |                 |                 |                     |             |                  |                      |             |                        |            |             |                   |

| <i>Surrogate (Extracted Internal Standard)</i>    | <i>MS</i>         |                  | <i>MSD</i>        |                  | <i>Acceptance Criteria</i> |
|---|-------------------|------------------|-------------------|------------------|----------------------------|
|   | <i>% Recovery</i> | <i>Qualifier</i> | <i>% Recovery</i> | <i>Qualifier</i> |                            |
| Perfluoro[13C4]Butanoic Acid (MPFBA)              | 90                |                  |                   |                  | 58-132                     |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)           | 70                |                  |                   |                  | 62-163                     |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)         | 36                |                  |                   |                  | 5-112                      |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)       | 92                |                  |                   |                  | 69-131                     |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)             | 95                |                  |                   |                  | 62-129                     |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)             | 92                |                  |                   |                  | 59-139                     |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS) | 80                |                  |                   |                  | 70-131                     |

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259157  
**Report Date:** 11/29/22

| Parameter  | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|--|---------------|------------------|-------|-----|------|------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1706997-4 QC Sample: L2259151-01 Client ID: DUP Sample |               |                  |       |     |      |            |
| Perfluoroheptanoic Acid (PFHpA)  | 4.87          | 5.14             | ng/l  | 5   |      | 30         |
| Perfluorohexanesulfonic Acid (PFHxS)   | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorooctanoic Acid (PFOA)  | 20.1          | 21.2             | ng/l  | 5   |      | 30         |
| Perfluorononanoic Acid (PFNA)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorooctanesulfonic Acid (PFOS)  | 3.39F         | 3.94F            | ng/l  | 15  |      | 30         |
| Perfluorodecanoic Acid (PFDA)  | ND            | ND               | ng/l  | NC  |      | 30         |

| Surrogate (Extracted Internal Standard)            | %Recovery | Qualifier | %Recovery | Qualifier | Acceptance Criteria |
|--|-----------|-----------|-----------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 74        |           | 69        |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 104       |           | 101       |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 96        |           | 93        |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 87        |           | 85        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 97        |           | 95        |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 86        |           | 85        |           | 62-124              |

**Project Name:** N.MONMOUTH PFAS**Lab Number:** L2259157**Project Number:** 5197.01**Report Date:** 11/29/22**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

**Cooler Information**

| <b>Cooler</b> | <b>Custody Seal</b> |
|---------------|---------------------|
| A             | Absent              |

**Container Information**

| <b>Container ID</b> | <b>Container Type</b>          | <b>Cooler</b> | <b>Initial pH</b> | <b>Final pH</b> | <b>Temp deg C</b> | <b>Pres</b> | <b>Seal</b> | <b>Frozen Date/Time</b> | <b>Analysis(*)</b>       |
|---------------------|--------------------------------|---------------|-------------------|-----------------|-------------------|-------------|-------------|-------------------------|--------------------------|
| L2259157-01A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259157-01B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259157-02A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259157-02B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259157-03A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259157-03B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11292213:41  
**Lab Number:** L2259157  
**Report Date:** 11/29/22

### PFAS PARAMETER SUMMARY

| Parameter   | Acronym      | CAS Number  |
|---|--------------|-------------|
| <b>PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)</b>                          |              |             |
| 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    |
| <b>PERFLUOROALKYL SULFONIC ACIDS (PFSAs)</b>                            |              |             |
| 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    |
| <b>FLUOROTELOMERS</b>   |              |             |
| 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 |
| <b>PERFLUOROALKANE SULFONAMIDES (FASAs)</b>                             |              |             |
| Perfluorooctanesulfonamide  | FOSA/PFOSA   | 754-91-6    |
| N-Ethyl Perfluorooctane Sulfonamide                                     | NEtFOSA      | 4151-50-2   |
| N-Methyl Perfluorooctane Sulfonamide                                    | NMeFOSA      | 31506-32-8  |
| <b>PERFLUOROALKANE SULFONYL SUBSTANCES</b>                              |              |             |
| 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   |
| <b>PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS</b>                  |              |             |
| 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 |
| <b>CHLORO-PERFLUOROALKYL SULFONIC ACIDS</b>                             |              |             |
| 11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid                      | 11Cl-PF3OUdS | 763051-92-9 |
| 9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid                        | 9Cl-PF3ONS   | 756426-58-1 |
| <b>PERFLUOROETHER SULFONIC ACIDS (PFESAs)</b>                           |              |             |
| Perfluoro(2-Ethoxyethane)Sulfonic Acid                                  | PFEESA       | 113507-82-7 |
| <b>PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)</b>               |              |             |
| 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11292213:41  
**Lab Number:** L2259157  
**Report Date:** 11/29/22

### 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259157  
**Report Date:** 11/29/22

## 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.)<br><br>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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259157  
**Report Date:** 11/29/22

### 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259157  
**Report Date:** 11/29/22

#### **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.)

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259157  
**Report Date:** 11/29/22

## REFERENCES

- 134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

## LIMITATION OF LIABILITIES

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

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



## 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, NO<sub>2</sub>, NO<sub>3</sub>.

### 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, SM4500CI-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, **LCHAT 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.





## ANALYTICAL REPORT

|                 |  |
|-----------------|--|
| Lab Number:     | L2259150   |
| Client:         | Sanborn, Head & Associates, Inc.<br>20 Foundry Street<br>Concord, NH 03301 |
| ATTN:           | Andrew Buchy   |
| Phone:          | (603) 229-1900   |
| Project Name:   | N.MONMOUTH PFAS  |
| Project Number: | 5197.01  |
| Report Date:    | 11/28/22   |

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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

---

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



**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259150  
**Report Date:** 11/28/22

| <b>Alpha<br/>Sample ID</b> | <b>Client ID</b>         | <b>Matrix</b> | <b>Sample<br/>Location</b> | <b>Collection<br/>Date/Time</b> | <b>Receive Date</b> |
|----------------------------|--------------------------|---------------|----------------------------|---------------------------------|---------------------|
| L2259150-01                | 52-70_POET_PRE_20221021  | WATER         | N.MONMOUTH, ME             | 10/21/22 12:52                  | 10/21/22            |
| L2259150-02                | 52-70_POET_MID_20221021  | WATER         | N.MONMOUTH, ME             | 10/21/22 12:55                  | 10/21/22            |
| L2259150-03                | 52-70_POET_POST_20221021 | WATER         | N.MONMOUTH, ME             | 10/21/22 12:57                  | 10/21/22            |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259150  
**Report Date:** 11/28/22

### 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259150  
**Report Date:** 11/28/22

**Case Narrative (continued)**

Perfluorinated Alkyl Acids by Isotope Dilution

L2259150-01, -02, and -03: Sample results for Perfluorohexanesulfonic Acid (PFHxS), Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS), are reported as the sum of the branched and linear isomers.

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* Darian Dailey

Title: Technical Director/Representative

Date: 11/28/22



# ORGANICS

# SEMIVOLATILES

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259150  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

**Lab ID:** L2259150-01  
**Client ID:** 52-70\_POET\_PRE\_20221021  
**Sample Location:** N.MONMOUTH, ME

**Date Collected:** 10/21/22 12:52  
**Date Received:** 10/21/22  
**Field Prep:** Not Specified

**Sample Depth:**

**Matrix:** Water  
**Analytical Method:** 134,LCMSMS-ID  
**Analytical Date:** 11/25/22 01:28  
**Analyst:** SG

**Extraction Method:** ALPHA 23528  
**Extraction Date:** 11/02/22 15:10

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | 5.44   |           | ng/l  | 1.76 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | 2.16   |           | ng/l  | 1.76 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | 25.8   |           | ng/l  | 1.76 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.76 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 11.2   |           | ng/l  | 1.76 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.76 | --  | 1               |
| PFAS, Total (6)   | 44.6   |           | ng/l  | 1.76 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 86         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 119        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 92         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 90         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 103        |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 98         |           | 62-124              |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259150  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

**Lab ID:** L2259150-02  
**Client ID:** 52-70\_POET\_MID\_20221021  
**Sample Location:** N.MONMOUTH, ME

**Date Collected:** 10/21/22 12:55  
**Date Received:** 10/21/22  
**Field Prep:** Not Specified

**Sample Depth:**

**Matrix:** Water  
**Analytical Method:** 134,LCMSMS-ID  
**Analytical Date:** 11/25/22 01:44  
**Analyst:** SG

**Extraction Method:** ALPHA 23528  
**Extraction Date:** 11/02/22 15:10

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.73 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.73 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.73 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.73 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 25.8   |           | ng/l  | 1.73 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.73 | --  | 1               |
| PFAS, Total (6)   | 25.8   |           | ng/l  | 1.73 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 97         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 123        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 100        |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 101        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 105        |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 102        |           | 62-124              |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259150  
**Report Date:** 11/28/22

**SAMPLE RESULTS**

Lab ID: L2259150-03  
 Client ID: 52-70\_POET\_POST\_20221021  
 Sample Location: N.MONMOUTH, ME

Date Collected: 10/21/22 12:57  
 Date Received: 10/21/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/25/22 02:01  
 Analyst: SG

Extraction Method: ALPHA 23528  
 Extraction Date: 11/02/22 15:10

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.81 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.81 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.81 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.81 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | ND     |           | ng/l  | 1.81 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.81 | --  | 1               |
| PFAS, Total (6)   | ND     |           | ng/l  | 1.81 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 95         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 124        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 100        |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 102        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 102        |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 99         |           | 62-124              |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259150  
**Report Date:** 11/28/22

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 11/03/22 16:37  
Analyst: AC

Extraction Method: ALPHA 23528  
Extraction Date: 11/02/22 15:10

| Parameter  | Result | Qualifier | Units | RL   | MDL |
|--|--------|-----------|-------|------|-----|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1707298-1 |        |           |       |      |     |
| Perfluoroheptanoic Acid (PFHpA)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorohexanesulfonic Acid (PFHxS)   | ND     |           | ng/l  | 2.00 | --  |
| Perfluorooctanoic Acid (PFOA)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorononanoic Acid (PFNA)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorooctanesulfonic Acid (PFOS)  | ND     |           | ng/l  | 2.00 | --  |
| Perfluorodecanoic Acid (PFDA)  | ND     |           | ng/l  | 2.00 | --  |
| PFAS, Total (6)  | ND     |           | ng/l  | 2.00 | --  |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259150  
**Report Date:** 11/28/22

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 11/03/22 16:37  
Analyst: AC

Extraction Method: ALPHA 23528  
Extraction Date: 11/02/22 15:10

| Parameter  | Result | Qualifier | Units | RL | MDL |
|--|--------|-----------|-------|----|-----|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1707298-1 |        |           |       |    |     |

| Surrogate (Extracted Internal Standard)  | %Recovery | Qualifier | Acceptance Criteria |
|--|-----------|-----------|---------------------|
| Perfluoro[13C4]Butanoic Acid (MPFBA)   | 106       |           | 58-132              |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)  | 109       |           | 62-163              |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)  | 116       |           | 70-131              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 90        |           | 12-142              |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 107       |           | 57-129              |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 104       |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 115       |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)  | 113       |           | 62-129              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 87        |           | 14-147              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)  | 107       |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)  | 109       |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 106       |           | 62-124              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 104       |           | 10-162              |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | 70        |           | 24-116              |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | 101       |           | 55-137              |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)  | 51        |           | 5-112               |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 63        |           | 27-126              |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 90        |           | 48-131              |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | 94        |           | 22-136              |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 96        |           | 10-165              |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 58        |           | 10-206              |

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** N.MONMOUTH PFAS

**Lab Number:** L2259150

**Project Number:** 5197.01

**Report Date:** 11/28/22

| Parameter   | <i>LCS</i><br>%Recovery | <i>Qual</i> | <i>LCSD</i><br>%Recovery | <i>Qual</i> | <i>%Recovery</i><br>Limits | <i>RPD</i> | <i>Qual</i> | <i>RPD</i><br>Limits |
|---|-------------------------|-------------|--------------------------|-------------|----------------------------|------------|-------------|----------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1707298-2 |                         |             |                          |             |                            |            |             |                      |
| Perfluoroheptanoic Acid (PFHpA)   | 97                      |             | -                        |             | 58-159                     | -          |             | 30                   |
| Perfluorohexanesulfonic Acid (PFHxS)  | 107                     |             | -                        |             | 69-177                     | -          |             | 30                   |
| Perfluorooctanoic Acid (PFOA)   | 90                      |             | -                        |             | 63-159                     | -          |             | 30                   |
| Perfluorononanoic Acid (PFNA)   | 93                      |             | -                        |             | 68-171                     | -          |             | 30                   |
| Perfluorooctanesulfonic Acid (PFOS)   | 104                     |             | -                        |             | 52-151                     | -          |             | 30                   |
| Perfluorodecanoic Acid (PFDA)   | 99                      |             | -                        |             | 63-171                     | -          |             | 30                   |



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: N.MONMOUTH PFAS

Lab Number: L2259150

Project Number: 5197.01

Report Date: 11/28/22

| Parameter   | LCS       |      | LCSD      |      | %Recovery |      | RPD | RPD    |  |
|---|-----------|------|-----------|------|-----------|------|-----|--------|--|
|   | %Recovery | Qual | %Recovery | Qual | Limits    | Qual |     | Limits |  |
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1707298-2 |           |      |           |      |           |      |     |        |  |

| Surrogate (Extracted Internal Standard)  | LCS       |      | LCSD      |      | Acceptance Criteria |
|--|-----------|------|-----------|------|---------------------|
|  | %Recovery | Qual | %Recovery | Qual |                     |
| Perfluoro[13C4]Butanoic Acid (MPFBA)   | 108       |      |           |      | 58-132              |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)  | 109       |      |           |      | 62-163              |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)  | 120       |      |           |      | 70-131              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 98        |      |           |      | 12-142              |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 108       |      |           |      | 57-129              |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 107       |      |           |      | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 118       |      |           |      | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)  | 117       |      |           |      | 62-129              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 94        |      |           |      | 14-147              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)  | 109       |      |           |      | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)  | 113       |      |           |      | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 104       |      |           |      | 62-124              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 115       |      |           |      | 10-162              |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | 73        |      |           |      | 24-116              |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | 98        |      |           |      | 55-137              |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)  | 49        |      |           |      | 5-112               |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 64        |      |           |      | 27-126              |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 93        |      |           |      | 48-131              |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | 95        |      |           |      | 22-136              |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 97        |      |           |      | 10-165              |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 57        |      |           |      | 10-206              |

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** N.MONMOUTH PFAS

**Lab Number:** L2259150

**Project Number:** 5197.01

**Report Date:** 11/28/22

| <i>Parameter</i>  | <i>Native Sample</i> | <i>MS Added</i> | <i>MS Found</i> | <i>MS %Recovery</i> | <i>Qual</i> | <i>MSD Found</i> | <i>MSD %Recovery</i> | <i>Qual</i> | <i>Recovery Limits</i> | <i>RPD</i> | <i>Qual</i> | <i>RPD Limits</i> |
|---|----------------------|-----------------|-----------------|---------------------|-------------|------------------|----------------------|-------------|------------------------|------------|-------------|-------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1707298-3 QC Sample: L2258790-01 Client ID: MS Sample |                      |                 |                 |                     |             |                  |                      |             |                        |            |             |                   |
| Perfluorobutanesulfonic Acid (PFBS)   | 15.0                 | 35.1            | 48.3            | 95                  |             | -                | -                    |             | 65-157                 | -          |             | 30                |
| 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)   | ND                   | 37              | 40.7            | 110                 |             | -                | -                    |             | 37-219                 | -          |             | 30                |
| Perfluorohexanoic Acid (PFHxA)  | 81.3                 | 39.5            | 119             | 96                  |             | -                | -                    |             | 69-168                 | -          |             | 30                |
| Perfluoropentanesulfonic Acid (PFPeS)   | 22.7                 | 37.2            | 64.4            | 112                 |             | -                | -                    |             | 52-156                 | -          |             | 30                |
| Perfluoroheptanoic Acid (PFHpA)   | 32.9                 | 39.5            | 71.7            | 98                  |             | -                | -                    |             | 58-159                 | -          |             | 30                |
| Perfluorohexanesulfonic Acid (PFHxS)  | 205                  | 36.1            | 248             | 119                 |             | -                | -                    |             | 69-177                 | -          |             | 30                |
| Perfluorooctanoic Acid (PFOA)   | 18.4                 | 39.5            | 54.3            | 91                  |             | -                | -                    |             | 63-159                 | -          |             | 30                |
| Perfluorononanoic Acid (PFNA)   | 4.32                 | 39.5            | 42.1            | 96                  |             | -                | -                    |             | 68-171                 | -          |             | 30                |
| Perfluorooctanesulfonic Acid (PFOS)   | 358                  | 36.6            | 412             | 147                 |             | -                | -                    |             | 52-151                 | -          |             | 30                |
| Perfluorodecanoic Acid (PFDA)   | ND                   | 39.5            | 37.9            | 95                  |             | -                | -                    |             | 63-171                 | -          |             | 30                |
| N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)   | ND                   | 39.5            | 35.5            | 90                  |             | -                | -                    |             | 60-166                 | -          |             | 30                |
| Perfluoroundecanoic Acid (PFUnA)  | ND                   | 39.5            | 47.0            | 119                 |             | -                | -                    |             | 60-153                 | -          |             | 30                |
| N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)  | ND                   | 39.5            | 41.8            | 106                 |             | -                | -                    |             | 45-170                 | -          |             | 30                |
| Perfluorododecanoic Acid (PFDoA)  | ND                   | 39.5            | 38.5            | 98                  |             | -                | -                    |             | 67-153                 | -          |             | 30                |
| Perfluorotridecanoic Acid (PFTrDA)  | ND                   | 39.5            | 39.2            | 99                  |             | -                | -                    |             | 48-158                 | -          |             | 30                |
| Perfluorotetradecanoic Acid (PFTA)  | ND                   | 39.5            | 41.5            | 105                 |             | -                | -                    |             | 59-182                 | -          |             | 30                |

| <i>Surrogate (Extracted Internal Standard)</i>                         | <i>MS</i>         |                  | <i>MSD</i>        |                  | <i>Acceptance Criteria</i> |
|--|-------------------|------------------|-------------------|------------------|----------------------------|
|  | <i>% Recovery</i> | <i>Qualifier</i> | <i>% Recovery</i> | <i>Qualifier</i> |                            |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)         | 149               | Q                |                   |                  | 12-142                     |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)  | 43                |                  |                   |                  | 27-126                     |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA) | 52                |                  |                   |                  | 24-116                     |

### Matrix Spike Analysis Batch Quality Control

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259150  
**Report Date:** 11/28/22

| <b>Parameter</b>  | <b>Native Sample</b> | <b>MS Added</b> | <b>MS Found</b> | <b>MS %Recovery</b> | <b>Qual</b> | <b>MSD Found</b> | <b>MSD %Recovery</b> | <b>Qual</b> | <b>Recovery Limits</b> | <b>RPD</b> | <b>Qual</b> | <b>RPD Limits</b> |
|---|----------------------|-----------------|-----------------|---------------------|-------------|------------------|----------------------|-------------|------------------------|------------|-------------|-------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1707298-3 QC Sample: L2258790-01 Client ID: MS Sample |                      |                 |                 |                     |             |                  |                      |             |                        |            |             |                   |

| <b>Surrogate (Extracted Internal Standard)</b>          | <b>MS % Recovery</b> | <b>Qualifier</b> | <b>MSD % Recovery</b> | <b>Qualifier</b> | <b>Acceptance Criteria</b> |
|---|----------------------|------------------|-----------------------|------------------|----------------------------|
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA) | 84                   |                  |                       |                  | 55-137                     |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)       | 94                   |                  |                       |                  | 62-124                     |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)        | 87                   |                  |                       |                  | 57-129                     |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)         | 79                   |                  |                       |                  | 60-129                     |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)      | 99                   |                  |                       |                  | 71-134                     |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)             | 70                   |                  |                       |                  | 48-131                     |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)        | 74                   |                  |                       |                  | 22-136                     |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)             | 107                  |                  |                       |                  | 69-131                     |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)                   | 108                  |                  |                       |                  | 62-129                     |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)                   | 94                   |                  |                       |                  | 59-139                     |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)       | 112                  |                  |                       |                  | 70-131                     |

## Lab Duplicate Analysis

### Batch Quality Control

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259150  
**Report Date:** 11/28/22

| Parameter  | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|--|---------------|------------------|-------|-----|------|------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1707298-4 QC Sample: L2258790-02 Client ID: DUP Sample |               |                  |       |     |      |            |
| Perfluorobutanesulfonic Acid (PFBS)  | 2600E         | 2610E            | ng/l  | 0   |      | 30         |
| 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorohexanoic Acid (PFHxA)   | 8800E         | 8750E            | ng/l  | 1   |      | 30         |
| Perfluoropentanesulfonic Acid (PFPeS)  | 2160E         | 2120E            | ng/l  | 2   |      | 30         |
| Perfluoroheptanoic Acid (PFHpA)  | 5220E         | 5110E            | ng/l  | 2   |      | 30         |
| Perfluorohexanesulfonic Acid (PFHxS)   | 6970E         | 6770E            | ng/l  | 3   |      | 30         |
| Perfluorooctanoic Acid (PFOA)  | 2190E         | 2250E            | ng/l  | 3   |      | 30         |
| Perfluorononanoic Acid (PFNA)  | 110           | 106              | ng/l  | 4   |      | 30         |
| Perfluorooctanesulfonic Acid (PFOS)  | 2370E         | 2190E            | ng/l  | 8   |      | 30         |
| Perfluorodecanoic Acid (PFDA)  | ND            | ND               | ng/l  | NC  |      | 30         |
| N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluoroundecanoic Acid (PFUnA)   | ND            | ND               | ng/l  | NC  |      | 30         |
| N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)   | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorododecanoic Acid (PFDoA)   | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorotridecanoic Acid (PFTrDA)   | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorotetradecanoic Acid (PFTA)   | ND            | ND               | ng/l  | NC  |      | 30         |

| Surrogate (Extracted Internal Standard)                        | %Recovery | Qualifier | %Recovery | Qualifier | Acceptance Criteria |
|--|-----------|-----------|-----------|-----------|---------------------|
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)              | 82        |           | 83        |           | 70-131              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS) | 146       | Q         | 152       | Q         | 12-142              |

## Lab Duplicate Analysis

### Batch Quality Control

Project Name: N.MONMOUTH PFAS

Project Number: 5197.01

Lab Number: L2259150

Report Date: 11/28/22

| Parameter  | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|--|---------------|------------------|-------|-----|------|------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1707298-4 QC Sample: L2258790-02 Client ID: DUP Sample |               |                  |       |     |      |            |

| Surrogate (Extracted Internal Standard)                                | %Recovery | Qualifier | %Recovery | Qualifier | Acceptance Criteria |
|--|-----------|-----------|-----------|-----------|---------------------|
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)                       | 49        | Q         | 49        | Q         | 57-129              |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)                        | 67        |           | 69        |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                     | 72        |           | 74        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)                                  | 104       |           | 101       |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)                                  | 96        |           | 95        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)                            | 101       |           | 108       |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)                      | 94        |           | 100       |           | 62-124              |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA) | 44        |           | 51        |           | 24-116              |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                | 90        |           | 92        |           | 55-137              |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)  | 49        |           | 55        |           | 27-126              |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)                            | 71        |           | 83        |           | 48-131              |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)                       | 84        |           | 88        |           | 22-136              |

**Project Name:** N.MONMOUTH PFAS

**Project Number:** 5197.01

Serial\_No:11282217:15

**Lab Number:** L2259150

**Report Date:** 11/28/22

**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

**Cooler Information**

| <b>Cooler</b> | <b>Custody Seal</b> |
|---------------|---------------------|
| A             | Absent              |

**Container Information**

| <b>Container ID</b> | <b>Container Type</b>          | <b>Cooler</b> | <b>Initial pH</b> | <b>Final pH</b> | <b>Temp deg C</b> | <b>Pres</b> | <b>Seal</b> | <b>Frozen Date/Time</b> | <b>Analysis(*)</b>       |
|---------------------|--------------------------------|---------------|-------------------|-----------------|-------------------|-------------|-------------|-------------------------|--------------------------|
| L2259150-01A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259150-01B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259150-02A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259150-02B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259150-03A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259150-03B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11282217:15  
**Lab Number:** L2259150  
**Report Date:** 11/28/22

### PFAS PARAMETER SUMMARY

| Parameter   | Acronym      | CAS Number  |
|---|--------------|-------------|
| <b>PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)</b>                          |              |             |
| 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    |
| <b>PERFLUOROALKYL SULFONIC ACIDS (PFSAs)</b>                            |              |             |
| 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    |
| <b>FLUOROTELOMERS</b>   |              |             |
| 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 |
| <b>PERFLUOROALKANE SULFONAMIDES (FASAs)</b>                             |              |             |
| Perfluorooctanesulfonamide  | FOSA/PFOSA   | 754-91-6    |
| N-Ethyl Perfluorooctane Sulfonamide                                     | NEtFOSA      | 4151-50-2   |
| N-Methyl Perfluorooctane Sulfonamide                                    | NMeFOSA      | 31506-32-8  |
| <b>PERFLUOROALKANE SULFONYL SUBSTANCES</b>                              |              |             |
| 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   |
| <b>PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS</b>                  |              |             |
| 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 |
| <b>CHLORO-PERFLUOROALKYL SULFONIC ACIDS</b>                             |              |             |
| 11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid                      | 11Cl-PF3OUdS | 763051-92-9 |
| 9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid                        | 9Cl-PF3ONS   | 756426-58-1 |
| <b>PERFLUOROETHER SULFONIC ACIDS (PFESAs)</b>                           |              |             |
| Perfluoro(2-Ethoxyethane)Sulfonic Acid                                  | PFEESA       | 113507-82-7 |
| <b>PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)</b>               |              |             |
| 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11282217:15  
**Lab Number:** L2259150  
**Report Date:** 11/28/22

### 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259150  
**Report Date:** 11/28/22

## 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.)<br><br>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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259150  
**Report Date:** 11/28/22

### 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259150  
**Report Date:** 11/28/22

#### **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.)

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259150  
**Report Date:** 11/28/22

## REFERENCES

- 134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

## LIMITATION OF LIABILITIES

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

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



## 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, NO<sub>2</sub>, NO<sub>3</sub>.

### 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, SM4500CI-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, **LCHAT 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.





## ANALYTICAL REPORT

|                 |  |
|-----------------|--|
| Lab Number:     | L2259151   |
| Client:         | Sanborn, Head & Associates, Inc.<br>20 Foundry Street<br>Concord, NH 03301 |
| ATTN:           | Andrew Buchy   |
| Phone:          | (603) 229-1900   |
| Project Name:   | N.MONMOUTH PFAS  |
| Project Number: | 5197.01  |
| Report Date:    | 11/29/22   |

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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

---

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



**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259151  
**Report Date:** 11/29/22

| <b>Alpha<br/>Sample ID</b> | <b>Client ID</b>         | <b>Matrix</b> | <b>Sample<br/>Location</b> | <b>Collection<br/>Date/Time</b> | <b>Receive Date</b> |
|----------------------------|--------------------------|---------------|----------------------------|---------------------------------|---------------------|
| L2259151-01                | 52-71_POET_PRE_20221021  | WATER         | N.MONMOUTH, ME             | 10/21/22 09:38                  | 10/21/22            |
| L2259151-02                | 52-71_POET_MID_20221021  | WATER         | N.MONMOUTH, ME             | 10/21/22 09:40                  | 10/21/22            |
| L2259151-03                | 52-71_POET_POST_20221021 | WATER         | N.MONMOUTH, ME             | 10/21/22 09:43                  | 10/21/22            |
| L2259151-04                | FB-01_20221021           | WATER         | N.MONMOUTH, ME             | 10/21/22 09:15                  | 10/21/22            |



**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259151  
**Report Date:** 11/29/22

### 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259151  
**Report Date:** 11/29/22

**Case Narrative (continued)**

Perfluorinated Alkyl Acids by Isotope Dilution

L2259151-01 through -04 and WG1706997-4: Sample results for Perfluorohexanesulfonic Acid (PFHxS), Perfluorooctanoic Acid (PFOA), and Perfluorooctanesulfonic Acid (PFOS) are reported as the sum of the branched and linear isomers.

L2259151-03: The Post result is greater than the Mid result. The sample containers were verified as being labeled correctly by the laboratory.

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

Title: Technical Director/Representative

Date: 11/29/22

# ORGANICS

# SEMIVOLATILES

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259151  
**Report Date:** 11/29/22

**SAMPLE RESULTS**

**Lab ID:** L2259151-01  
**Client ID:** 52-71\_POET\_PRE\_20221021  
**Sample Location:** N.MONMOUTH, ME

**Date Collected:** 10/21/22 09:38  
**Date Received:** 10/21/22  
**Field Prep:** Not Specified

**Sample Depth:**

**Matrix:** Water  
**Analytical Method:** 134,LCMSMS-ID  
**Analytical Date:** 11/08/22 22:27  
**Analyst:** AC

**Extraction Method:** ALPHA 23528  
**Extraction Date:** 11/02/22 09:15

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | 4.87   |           | ng/l  | 1.77 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.77 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | 20.1   |           | ng/l  | 1.77 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.77 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 3.39   | F         | ng/l  | 1.77 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.77 | --  | 1               |
| PFAS, Total (6)   | 28.4   |           | ng/l  | 1.77 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 74         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 104        |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 96         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 87         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 97         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 86         |           | 62-124              |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259151  
**Report Date:** 11/29/22

**SAMPLE RESULTS**

Lab ID: L2259151-02  
 Client ID: 52-71\_POET\_MID\_20221021  
 Sample Location: N.MONMOUTH, ME

Date Collected: 10/21/22 09:40  
 Date Received: 10/21/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/23/22 20:07  
 Analyst: SL

Extraction Method: ALPHA 23528  
 Extraction Date: 11/02/22 09:15

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.77 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.77 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.77 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.77 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | ND     |           | ng/l  | 1.77 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.77 | --  | 1               |
| PFAS, Total (6)   | ND     |           | ng/l  | 1.77 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 86         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 91         |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 88         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 87         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 86         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 83         |           | 62-124              |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259151  
**Report Date:** 11/29/22

**SAMPLE RESULTS**

Lab ID: L2259151-03  
 Client ID: 52-71\_POET\_POST\_20221021  
 Sample Location: N.MONMOUTH, ME

Date Collected: 10/21/22 09:43  
 Date Received: 10/21/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/23/22 20:23  
 Analyst: SL

Extraction Method: ALPHA 23528  
 Extraction Date: 11/02/22 09:15

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.76 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.76 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.76 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.76 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | 5.96   |           | ng/l  | 1.76 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.76 | --  | 1               |
| PFAS, Total (6)   | 5.96   |           | ng/l  | 1.76 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 95         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 96         |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 92         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 86         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 87         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 81         |           | 62-124              |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259151  
**Report Date:** 11/29/22

**SAMPLE RESULTS**

Lab ID: L2259151-04  
 Client ID: FB-01\_20221021  
 Sample Location: N.MONMOUTH, ME

Date Collected: 10/21/22 09:15  
 Date Received: 10/21/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 11/23/22 20:40  
 Analyst: SL

Extraction Method: ALPHA 23528  
 Extraction Date: 11/02/22 09:15

| Parameter   | Result | Qualifier | Units | RL   | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-----|-----------------|
| <b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b> |        |           |       |      |     |                 |
| Perfluoroheptanoic Acid (PFHpA)                                       | ND     |           | ng/l  | 1.83 | --  | 1               |
| Perfluorohexanesulfonic Acid (PFHxS)                                  | ND     |           | ng/l  | 1.83 | --  | 1               |
| Perfluorooctanoic Acid (PFOA)   | ND     |           | ng/l  | 1.83 | --  | 1               |
| Perfluorononanoic Acid (PFNA)   | ND     |           | ng/l  | 1.83 | --  | 1               |
| Perfluorooctanesulfonic Acid (PFOS)                                   | ND     |           | ng/l  | 1.83 | --  | 1               |
| Perfluorodecanoic Acid (PFDA)   | ND     |           | ng/l  | 1.83 | --  | 1               |
| PFAS, Total (6)   | ND     |           | ng/l  | 1.83 | --  | 1               |

| Surrogate (Extracted Internal Standard)            | % Recovery | Qualifier | Acceptance Criteria |
|--|------------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 89         |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 84         |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 84         |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 73         |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 81         |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 74         |           | 62-124              |



**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259151  
**Report Date:** 11/29/22

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 11/08/22 20:48  
Analyst: AC

Extraction Method: ALPHA 23528  
Extraction Date: 11/02/22 09:15

| <b>Parameter</b>   | <b>Result</b> | <b>Qualifier</b> | <b>Units</b> | <b>RL</b> | <b>MDL</b> |
|--|---------------|------------------|--------------|-----------|------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-04 Batch: WG1706997-1 |               |                  |              |           |            |
| Perfluoroheptanoic Acid (PFHpA)  | ND            |                  | ng/l         | 2.00      | --         |
| Perfluorohexanesulfonic Acid (PFHxS)   | ND            |                  | ng/l         | 2.00      | --         |
| Perfluorooctanoic Acid (PFOA)  | ND            |                  | ng/l         | 2.00      | --         |
| Perfluorononanoic Acid (PFNA)  | ND            |                  | ng/l         | 2.00      | --         |
| Perfluorooctanesulfonic Acid (PFOS)  | ND            |                  | ng/l         | 2.00      | --         |
| Perfluorodecanoic Acid (PFDA)  | ND            |                  | ng/l         | 2.00      | --         |
| PFAS, Total (6)  | ND            |                  | ng/l         | 2.00      | --         |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259151  
**Report Date:** 11/29/22

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 11/08/22 20:48  
Analyst: AC

Extraction Method: ALPHA 23528  
Extraction Date: 11/02/22 09:15

| Parameter  | Result | Qualifier | Units | RL | MDL |
|--|--------|-----------|-------|----|-----|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-04 Batch: WG1706997-1 |        |           |       |    |     |

| Surrogate (Extracted Internal Standard)  | %Recovery | Qualifier | Acceptance Criteria |
|--|-----------|-----------|---------------------|
| Perfluoro[13C4]Butanoic Acid (MPFBA)   | 92        |           | 58-132              |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)  | 95        |           | 62-163              |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)  | 98        |           | 70-131              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 96        |           | 12-142              |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 88        |           | 57-129              |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 89        |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 101       |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)  | 98        |           | 62-129              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 90        |           | 14-147              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)  | 91        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)  | 99        |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 86        |           | 62-124              |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 109       |           | 10-162              |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | 53        |           | 24-116              |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | 82        |           | 55-137              |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)  | 46        |           | 5-112               |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 53        |           | 27-126              |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 74        |           | 48-131              |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | 66        |           | 22-136              |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 80        |           | 10-165              |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 32        |           | 10-206              |
| 1H,1H,2H,2H-Perfluorododecane Sulfonate (M2D4-10:2FTS)                                   | 112       |           | 50-150              |

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** N.MONMOUTH PFAS

**Lab Number:** L2259151

**Project Number:** 5197.01

**Report Date:** 11/29/22

| <b>Parameter</b>  | <b>LCS<br/>%Recovery</b> | <b>Qual</b> | <b>LCSD<br/>%Recovery</b> | <b>Qual</b> | <b>%Recovery<br/>Limits</b> | <b>RPD</b> | <b>Qual</b> | <b>RPD<br/>Limits</b> |
|---|--------------------------|-------------|---------------------------|-------------|-----------------------------|------------|-------------|-----------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 Batch: WG1706997-2 |                          |             |                           |             |                             |            |             |                       |
| Perfluoroheptanoic Acid (PFHpA)   | 105                      |             | -                         |             | 58-159                      | -          |             | 30                    |
| Perfluorohexanesulfonic Acid (PFHxS)  | 109                      |             | -                         |             | 69-177                      | -          |             | 30                    |
| Perfluorooctanoic Acid (PFOA)   | 96                       |             | -                         |             | 63-159                      | -          |             | 30                    |
| Perfluorononanoic Acid (PFNA)   | 97                       |             | -                         |             | 68-171                      | -          |             | 30                    |
| Perfluorooctanesulfonic Acid (PFOS)   | 112                      |             | -                         |             | 52-151                      | -          |             | 30                    |
| Perfluorodecanoic Acid (PFDA)   | 97                       |             | -                         |             | 63-171                      | -          |             | 30                    |

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: N.MONMOUTH PFAS

Lab Number: L2259151

Project Number: 5197.01

Report Date: 11/29/22

| Parameter   | LCS       |      | LCSD      |      | %Recovery |      | RPD | RPD    |  |
|---|-----------|------|-----------|------|-----------|------|-----|--------|--|
|   | %Recovery | Qual | %Recovery | Qual | Limits    | Qual |     | Limits |  |
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 Batch: WG1706997-2 |           |      |           |      |           |      |     |        |  |

| Surrogate (Extracted Internal Standard)  | LCS       |      | LCSD      |      | Acceptance<br>Criteria |
|--|-----------|------|-----------|------|------------------------|
|  | %Recovery | Qual | %Recovery | Qual |                        |
| Perfluoro[13C4]Butanoic Acid (MPFBA)   | 94        |      |           |      | 58-132                 |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)  | 97        |      |           |      | 62-163                 |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)  | 100       |      |           |      | 70-131                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 99        |      |           |      | 12-142                 |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 89        |      |           |      | 57-129                 |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 89        |      |           |      | 60-129                 |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 99        |      |           |      | 71-134                 |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)  | 100       |      |           |      | 62-129                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 91        |      |           |      | 14-147                 |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)  | 93        |      |           |      | 59-139                 |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)  | 98        |      |           |      | 69-131                 |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 96        |      |           |      | 62-124                 |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 109       |      |           |      | 10-162                 |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | 56        |      |           |      | 24-116                 |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | 83        |      |           |      | 55-137                 |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)  | 50        |      |           |      | 5-112                  |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 52        |      |           |      | 27-126                 |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 80        |      |           |      | 48-131                 |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | 74        |      |           |      | 22-136                 |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 76        |      |           |      | 10-165                 |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 44        |      |           |      | 10-206                 |
| 1H,1H,2H,2H-Perfluorododecane Sulfonate (M2D4-10:2FTS)                                   | 104       |      |           |      | 50-150                 |

## Matrix Spike Analysis

### Batch Quality Control

**Project Name:** N.MONMOUTH PFAS

**Lab Number:** L2259151

**Project Number:** 5197.01

**Report Date:** 11/29/22

| <b>Parameter</b>  | <b>Native Sample</b> | <b>MS Added</b> | <b>MS Found</b> | <b>MS %Recovery</b> | <b>Qual</b> | <b>MSD Found</b> | <b>MSD %Recovery</b> | <b>Qual</b> | <b>Recovery Limits</b> | <b>RPD</b> | <b>Qual</b> | <b>RPD Limits</b> |
|---|----------------------|-----------------|-----------------|---------------------|-------------|------------------|----------------------|-------------|------------------------|------------|-------------|-------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1706997-3 QC Sample: L2259006-01 Client ID: MS Sample |                      |                 |                 |                     |             |                  |                      |             |                        |            |             |                   |
| Perfluorobutanoic Acid (PFBA)   | 72.9                 | 37.8            | 111             | 101                 |             | -                | -                    |             | 67-148                 | -          |             | 30                |
| Perfluoropentanoic Acid (PFPeA)   | 91.4                 | 37.8            | 130             | 102                 |             | -                | -                    |             | 63-161                 | -          |             | 30                |
| Perfluorobutanesulfonic Acid (PFBS)   | 17.2                 | 33.6            | 52.5            | 105                 |             | -                | -                    |             | 65-157                 | -          |             | 30                |
| 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)   | ND                   | 35.5            | 39.1            | 110                 |             | -                | -                    |             | 37-219                 | -          |             | 30                |
| Perfluorohexanoic Acid (PFHxA)  | 133                  | 37.8            | 174             | 108                 |             | -                | -                    |             | 69-168                 | -          |             | 30                |
| Perfluoropentanesulfonic Acid (PFPeS)   | 3.07                 | 35.6            | 38.8            | 100                 |             | -                | -                    |             | 52-156                 | -          |             | 30                |
| Perfluoroheptanoic Acid (PFHpA)   | 57.8                 | 37.8            | 96.6            | 103                 |             | -                | -                    |             | 58-159                 | -          |             | 30                |
| Perfluorohexanesulfonic Acid (PFHxS)  | 24.8                 | 34.6            | 63.4            | 112                 |             | -                | -                    |             | 69-177                 | -          |             | 30                |
| Perfluorooctanoic Acid (PFOA)   | 115                  | 37.8            | 154             | 103                 |             | -                | -                    |             | 63-159                 | -          |             | 30                |
| 1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)   | 3.66                 | 36              | 43.1            | 110                 |             | -                | -                    |             | 49-187                 | -          |             | 30                |
| Perfluoroheptanesulfonic Acid (PFHpS)   | ND                   | 36.1            | 36.1            | 100                 |             | -                | -                    |             | 61-179                 | -          |             | 30                |
| Perfluorononanoic Acid (PFNA)   | 7.10                 | 37.8            | 43.4            | 96                  |             | -                | -                    |             | 68-171                 | -          |             | 30                |
| Perfluorooctanesulfonic Acid (PFOS)   | 18.0                 | 35.1            | 56.0            | 108                 |             | -                | -                    |             | 52-151                 | -          |             | 30                |
| Perfluorodecanoic Acid (PFDA)   | 4.38                 | 37.8            | 41.2            | 97                  |             | -                | -                    |             | 63-171                 | -          |             | 30                |
| 1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)   | ND                   | 36.3            | 42.3            | 116                 |             | -                | -                    |             | 56-173                 | -          |             | 30                |
| Perfluorononanesulfonic Acid (PFNS)   | ND                   | 36.4            | 33.2            | 91                  |             | -                | -                    |             | 48-150                 | -          |             | 30                |
| N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)   | ND                   | 37.8            | 39.0            | 103                 |             | -                | -                    |             | 60-166                 | -          |             | 30                |
| Perfluoroundecanoic Acid (PFUnA)  | ND                   | 37.8            | 49.5            | 131                 |             | -                | -                    |             | 60-153                 | -          |             | 30                |
| Perfluorodecanesulfonic Acid (PFDS)   | ND                   | 36.5            | 30.4            | 83                  |             | -                | -                    |             | 38-156                 | -          |             | 30                |
| Perfluorooctanesulfonamide (FOSA)   | ND                   | 37.8            | 36.8F           | 97                  |             | -                | -                    |             | 46-170                 | -          |             | 30                |
| N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)  | ND                   | 37.8            | 46.1            | 118                 |             | -                | -                    |             | 45-170                 | -          |             | 30                |
| Perfluorododecanoic Acid (PFDoA)  | ND                   | 37.8            | 36.9            | 98                  |             | -                | -                    |             | 67-153                 | -          |             | 30                |

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** N.MONMOUTH PFAS

**Lab Number:** L2259151

**Project Number:** 5197.01

**Report Date:** 11/29/22

| <i>Parameter</i>  | <i>Native Sample</i> | <i>MS Added</i> | <i>MS Found</i> | <i>MS %Recovery</i> | <i>Qual</i> | <i>MSD Found</i> | <i>MSD %Recovery</i> | <i>Qual</i> | <i>Recovery Limits</i> | <i>RPD</i> | <i>Qual</i> | <i>RPD Limits</i> |
|---|----------------------|-----------------|-----------------|---------------------|-------------|------------------|----------------------|-------------|------------------------|------------|-------------|-------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1706997-3 QC Sample: L2259006-01 Client ID: MS Sample |                      |                 |                 |                     |             |                  |                      |             |                        |            |             |                   |
| Perfluorotridecanoic Acid (PFTTrDA)   | ND                   | 37.8            | 41.4            | 109                 |             | -                | -                    |             | 48-158                 | -          |             | 30                |
| Perfluorotetradecanoic Acid (PFTTA)   | ND                   | 37.8            | 43.4            | 115                 |             | -                | -                    |             | 59-182                 | -          |             | 30                |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)   | ND                   | 369             | 380F            | 103                 |             | -                | -                    |             | 57-162                 | -          |             | 30                |
| 4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)   | ND                   | 35.8            | 29.2            | 82                  |             | -                | -                    |             | 69-143                 | -          |             | 30                |
| Perfluorohexadecanoic Acid (PFHxDA)   | ND                   | 37.8            | 47.9            | 127                 |             | -                | -                    |             | 40-167                 | -          |             | 30                |
| Perfluorooctadecanoic Acid (PFODA)  | ND                   | 37.8            | 52.7            | 139                 | Q           | -                | -                    |             | 10-119                 | -          |             | 30                |

| <i>Surrogate (Extracted Internal Standard)</i>   | <i>MS % Recovery</i> | <i>Qualifier</i> | <i>MSD % Recovery</i> | <i>Qualifier</i> | <i>Acceptance Criteria</i> |
|--|----------------------|------------------|-----------------------|------------------|----------------------------|
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)                           | 141                  |                  |                       |                  | 10-162                     |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)                           | 171                  | Q                |                       |                  | 12-142                     |
| 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)                           | 171                  | Q                |                       |                  | 14-147                     |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 69                   |                  |                       |                  | 10-165                     |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)                    | 39                   |                  |                       |                  | 27-126                     |
| N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)                   | 47                   |                  |                       |                  | 24-116                     |
| Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)                                  | 71                   |                  |                       |                  | 55-137                     |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 81                   |                  |                       |                  | 62-124                     |
| Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)   | 63                   |                  |                       |                  | 57-129                     |
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)  | 72                   |                  |                       |                  | 60-129                     |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)                                       | 91                   |                  |                       |                  | 71-134                     |
| Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)  | 56                   |                  |                       |                  | 48-131                     |
| Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)   | 61                   |                  |                       |                  | 22-136                     |
| Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)  | 32                   |                  |                       |                  | 10-206                     |

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** N.MONMOUTH PFAS

**Lab Number:** L2259151

**Project Number:** 5197.01

**Report Date:** 11/29/22

| <b>Parameter</b>  | <b>Native Sample</b> | <b>MS Added</b> | <b>MS Found</b> | <b>MS %Recovery</b> | <b>Qual</b> | <b>MSD Found</b> | <b>MSD %Recovery</b> | <b>Qual</b> | <b>Recovery Limits</b> | <b>RPD</b> | <b>Qual</b> | <b>RPD Limits</b> |
|---|----------------------|-----------------|-----------------|---------------------|-------------|------------------|----------------------|-------------|------------------------|------------|-------------|-------------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1706997-3 QC Sample: L2259006-01 Client ID: MS Sample |                      |                 |                 |                     |             |                  |                      |             |                        |            |             |                   |

| <b>Surrogate (Extracted Internal Standard)</b>    | <b>MS</b>         |                  | <b>MSD</b>        |                  | <b>Acceptance Criteria</b> |
|---|-------------------|------------------|-------------------|------------------|----------------------------|
|   | <b>% Recovery</b> | <b>Qualifier</b> | <b>% Recovery</b> | <b>Qualifier</b> |                            |
| Perfluoro[13C4]Butanoic Acid (MPFBA)              | 90                |                  |                   |                  | 58-132                     |
| Perfluoro[13C5]Pentanoic Acid (M5PFPEA)           | 70                |                  |                   |                  | 62-163                     |
| Perfluoro[13C8]Octanesulfonamide (M8FOSA)         | 36                |                  |                   |                  | 5-112                      |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)       | 92                |                  |                   |                  | 69-131                     |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)             | 95                |                  |                   |                  | 62-129                     |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)             | 92                |                  |                   |                  | 59-139                     |
| Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS) | 80                |                  |                   |                  | 70-131                     |

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259151  
**Report Date:** 11/29/22

| Parameter   | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---------------|------------------|-------|-----|------|------------|
| Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1706997-4 QC Sample: L2259151-01 Client ID: 52-71_POET_PRE_20221021 |               |                  |       |     |      |            |
| Perfluoroheptanoic Acid (PFHpA)   | 4.87          | 5.14             | ng/l  | 5   |      | 30         |
| Perfluorohexanesulfonic Acid (PFHxS)  | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorooctanoic Acid (PFOA)   | 20.1          | 21.2             | ng/l  | 5   |      | 30         |
| Perfluorononanoic Acid (PFNA)   | ND            | ND               | ng/l  | NC  |      | 30         |
| Perfluorooctanesulfonic Acid (PFOS)   | 3.39F         | 3.94F            | ng/l  | 15  |      | 30         |
| Perfluorodecanoic Acid (PFDA)   | ND            | ND               | ng/l  | NC  |      | 30         |

| Surrogate (Extracted Internal Standard)            | %Recovery | Qualifier | %Recovery | Qualifier | Acceptance Criteria |
|--|-----------|-----------|-----------|-----------|---------------------|
| Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)    | 74        |           | 69        |           | 60-129              |
| Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS) | 104       |           | 101       |           | 71-134              |
| Perfluoro[13C8]Octanoic Acid (M8PFOA)              | 96        |           | 93        |           | 62-129              |
| Perfluoro[13C9]Nonanoic Acid (M9PFNA)              | 87        |           | 85        |           | 59-139              |
| Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)        | 97        |           | 95        |           | 69-131              |
| Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)  | 86        |           | 85        |           | 62-124              |



**Project Name:** N.MONMOUTH PFAS**Lab Number:** L2259151**Project Number:** 5197.01**Report Date:** 11/29/22**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

**Cooler Information**

| <b>Cooler</b> | <b>Custody Seal</b> |
|---------------|---------------------|
| A             | Absent              |

**Container Information**

| <b>Container ID</b> | <b>Container Type</b>          | <b>Cooler</b> | <b>Initial pH</b> | <b>Final pH</b> | <b>Temp deg C</b> | <b>Pres</b> | <b>Seal</b> | <b>Frozen Date/Time</b> | <b>Analysis(*)</b>       |
|---------------------|--------------------------------|---------------|-------------------|-----------------|-------------------|-------------|-------------|-------------------------|--------------------------|
| L2259151-01A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259151-01B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259151-02A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259151-02B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259151-03A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259151-03B        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |
| L2259151-04A        | Plastic 250ml Trizma preserved | A             | NA                |                 | 3.2               | Y           | Absent      |                         | A2-ME-537ISOTOPE-28+(14) |

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11292213:42  
**Lab Number:** L2259151  
**Report Date:** 11/29/22

### PFAS PARAMETER SUMMARY

| Parameter   | Acronym      | CAS Number  |
|---|--------------|-------------|
| <b>PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)</b>                          |              |             |
| 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    |
| <b>PERFLUOROALKYL SULFONIC ACIDS (PFSAs)</b>                            |              |             |
| 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    |
| <b>FLUOROTELOMERS</b>   |              |             |
| 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 |
| <b>PERFLUOROALKANE SULFONAMIDES (FASAs)</b>                             |              |             |
| Perfluorooctanesulfonamide  | FOSA/PFOSA   | 754-91-6    |
| N-Ethyl Perfluorooctane Sulfonamide                                     | NEtFOSA      | 4151-50-2   |
| N-Methyl Perfluorooctane Sulfonamide                                    | NMeFOSA      | 31506-32-8  |
| <b>PERFLUOROALKANE SULFONYL SUBSTANCES</b>                              |              |             |
| 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   |
| <b>PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS</b>                  |              |             |
| 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 |
| <b>CHLORO-PERFLUOROALKYL SULFONIC ACIDS</b>                             |              |             |
| 11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid                      | 11Cl-PF3OUdS | 763051-92-9 |
| 9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid                        | 9Cl-PF3ONS   | 756426-58-1 |
| <b>PERFLUOROETHER SULFONIC ACIDS (PFESAs)</b>                           |              |             |
| Perfluoro(2-Ethoxyethane)Sulfonic Acid                                  | PFEESA       | 113507-82-7 |
| <b>PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)</b>               |              |             |
| 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

Serial\_No:11292213:42  
**Lab Number:** L2259151  
**Report Date:** 11/29/22

### 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259151  
**Report Date:** 11/29/22

## 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.)<br><br>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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259151  
**Report Date:** 11/29/22

### 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:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259151  
**Report Date:** 11/29/22

#### **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.)

**Project Name:** N.MONMOUTH PFAS  
**Project Number:** 5197.01

**Lab Number:** L2259151  
**Report Date:** 11/29/22

## REFERENCES

- 134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

## LIMITATION OF LIABILITIES

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

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



## 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, NO<sub>2</sub>, NO<sub>3</sub>.

### 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, SM4500CI-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, **LCHAT 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.





 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 1/8/2023 10:59:05 PM

**JOB DESCRIPTION**

N Monmouth PFAS

**JOB NUMBER**

410-110273-1

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
1/8/2023 10:59:05 PM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 10 |
| QC Sample Results . . . . .        | 11 |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 16 |
| Sample Summary . . . . .           | 17 |
| Chain of Custody . . . . .         | 18 |
| Receipt Checklists . . . . .       | 19 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110273-1

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110273-1

---

**Job ID: 410-110273-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative  
410-110273-1**

**Receipt**

The samples were received on 12/22/2022 11:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.5°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110273-1

## Client Sample ID: 52-74\_POET\_Pre\_20221221

Lab Sample ID: 410-110273-1

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 28     |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 130    |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorononanoic acid (PFNA)        | 3.2    |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 6.5    |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 68     |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-74\_POET\_Mid\_20221221

Lab Sample ID: 410-110273-2

| Analyte                             | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 8.9    |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-74\_POET\_Post\_20221221

Lab Sample ID: 410-110273-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC



# Client Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110273-1

**Client Sample ID: 52-74\_POET\_Pre\_20221221**

**Lab Sample ID: 410-110273-1**

Date Collected: 12/21/22 11:18

Matrix: Water

Date Received: 12/22/22 11:00

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 28        |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:52 | 1       |
| Perfluorooctanoic acid (PFOA)        | 130       |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:52 | 1       |
| Perfluorononanoic acid (PFNA)        | 3.2       |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:52 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 6.5       |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:52 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 68        |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:52 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 21:52 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 120       |           | 31 - 182 |     |      |   | 01/04/23 15:46 | 01/05/23 21:52 | 1       |
| 13C8 PFOA                            | 105       |           | 48 - 162 |     |      |   | 01/04/23 15:46 | 01/05/23 21:52 | 1       |
| 13C9 PFNA                            | 118       |           | 51 - 167 |     |      |   | 01/04/23 15:46 | 01/05/23 21:52 | 1       |
| 13C3 PFHxS                           | 122       |           | 28 - 188 |     |      |   | 01/04/23 15:46 | 01/05/23 21:52 | 1       |
| 13C8 PFOS                            | 117       |           | 51 - 159 |     |      |   | 01/04/23 15:46 | 01/05/23 21:52 | 1       |
| 13C6 PFDA                            | 107       |           | 49 - 163 |     |      |   | 01/04/23 15:46 | 01/05/23 21:52 | 1       |

**Client Sample ID: 52-74\_POET\_Mid\_20221221**

**Lab Sample ID: 410-110273-2**

Date Collected: 12/21/22 11:20

Matrix: Water

Date Received: 12/22/22 11:00

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 22:03 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 22:03 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 22:03 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 22:03 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 8.9       |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 22:03 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.6      |           | 1.6      |     | ng/L |   | 01/04/23 15:46 | 01/05/23 22:03 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 125       |           | 31 - 182 |     |      |   | 01/04/23 15:46 | 01/05/23 22:03 | 1       |
| 13C8 PFOA                            | 126       |           | 48 - 162 |     |      |   | 01/04/23 15:46 | 01/05/23 22:03 | 1       |
| 13C9 PFNA                            | 127       |           | 51 - 167 |     |      |   | 01/04/23 15:46 | 01/05/23 22:03 | 1       |
| 13C3 PFHxS                           | 129       |           | 28 - 188 |     |      |   | 01/04/23 15:46 | 01/05/23 22:03 | 1       |
| 13C8 PFOS                            | 124       |           | 51 - 159 |     |      |   | 01/04/23 15:46 | 01/05/23 22:03 | 1       |
| 13C6 PFDA                            | 114       |           | 49 - 163 |     |      |   | 01/04/23 15:46 | 01/05/23 22:03 | 1       |

**Client Sample ID: 52-74\_POET\_Post\_20221221**

**Lab Sample ID: 410-110273-3**

Date Collected: 12/21/22 11:22

Matrix: Water

Date Received: 12/22/22 11:00

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7   |           | 1.7 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 22:14 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 22:14 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 22:14 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7   |           | 1.7 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 22:14 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.7   |           | 1.7 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 22:14 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 22:14 | 1       |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110273-1

**Client Sample ID: 52-74\_POET\_Post\_20221221**

**Lab Sample ID: 410-110273-3**

**Date Collected: 12/21/22 11:22**

**Matrix: Water**

**Date Received: 12/22/22 11:00**

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C4 PFHpA              | 116              |                  | 31 - 182      | 01/04/23 15:46  | 01/05/23 22:14  | 1              |
| 13C8 PFOA               | 106              |                  | 48 - 162      | 01/04/23 15:46  | 01/05/23 22:14  | 1              |
| 13C9 PFNA               | 115              |                  | 51 - 167      | 01/04/23 15:46  | 01/05/23 22:14  | 1              |
| 13C3 PFHxS              | 119              |                  | 28 - 188      | 01/04/23 15:46  | 01/05/23 22:14  | 1              |
| 13C8 PFOS               | 114              |                  | 51 - 159      | 01/04/23 15:46  | 01/05/23 22:14  | 1              |
| 13C6 PFDA               | 107              |                  | 49 - 163      | 01/04/23 15:46  | 01/05/23 22:14  | 1              |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110273-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID         | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|--------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                          | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-110273-1       | 52-74_POET_Pre_20221221  | 120   | 105                | 118                | 122                | 117                | 107                |
| 410-110273-2       | 52-74_POET_Mid_20221221  | 125   | 126                | 127                | 129                | 124                | 114                |
| 410-110273-3       | 52-74_POET_Post_20221221 | 116   | 106                | 115                | 119                | 114                | 107                |
| LCS 410-332570/2-A | Lab Control Sample       | 125   | 125                | 131                | 127                | 128                | 122                |
| LCS 410-332570/3-A | Lab Control Sample Dup   | 120   | 121                | 127                | 121                | 122                | 113                |
| MB 410-332570/1-A  | Method Blank             | 113   | 104                | 115                | 109                | 109                | 101                |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110273-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-332570/1-A**  
**Matrix: Water**  
**Analysis Batch: 332827**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 332570**

| Analyte                              | MB     | MB        | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |     |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/04/23 15:46 | 01/05/23 18:21 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 113       |           | 31 - 182 | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| 13C8 PFOA        | 104       |           | 48 - 162 | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| 13C9 PFNA        | 115       |           | 51 - 167 | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| 13C3 PFHxS       | 109       |           | 28 - 188 | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| 13C8 PFOS        | 109       |           | 51 - 159 | 01/04/23 15:46 | 01/05/23 18:21 | 1       |
| 13C6 PFDA        | 101       |           | 49 - 163 | 01/04/23 15:46 | 01/05/23 18:21 | 1       |

**Lab Sample ID: LCS 410-332570/2-A**  
**Matrix: Water**  
**Analysis Batch: 332827**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 332570**

| Analyte                              | Spike Added | LCS    | LCS       | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|
|                                      |             | Result | Qualifier |      |   |      |             |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 22.5   |           | ng/L |   | 88   | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 20.5   |           | ng/L |   | 80   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 22.3   |           | ng/L |   | 87   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.2   |           | ng/L |   | 82   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 20.2   |           | ng/L |   | 85   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 21.6   |           | ng/L |   | 84   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 125       |           | 31 - 182 |
| 13C8 PFOA        | 125       |           | 48 - 162 |
| 13C9 PFNA        | 131       |           | 51 - 167 |
| 13C3 PFHxS       | 127       |           | 28 - 188 |
| 13C8 PFOS        | 128       |           | 51 - 159 |
| 13C6 PFDA        | 122       |           | 49 - 163 |

**Lab Sample ID: LCSD 410-332570/3-A**  
**Matrix: Water**  
**Analysis Batch: 332827**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 332570**

| Analyte                              | Spike Added | LCSD   | LCSD      | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|-----|-----------|
|                                      |             | Result | Qualifier |      |   |      |             |     |           |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 23.5   |           | ng/L |   | 92   | 59 - 145    | 4   | 30        |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 19.8   |           | ng/L |   | 77   | 51 - 145    | 3   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 22.4   |           | ng/L |   | 87   | 61 - 139    | 0   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.5   |           | ng/L |   | 83   | 58 - 134    | 1   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 19.7   |           | ng/L |   | 83   | 45 - 150    | 2   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 21.3   |           | ng/L |   | 83   | 56 - 138    | 1   | 30        |

Eurofins Lancaster Laboratories Environment Testing, LLC

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110273-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 120              |                  | 31 - 182      |
| 13C8 PFOA               | 121              |                  | 48 - 162      |
| 13C9 PFNA               | 127              |                  | 51 - 167      |
| 13C3 PFHxS              | 121              |                  | 28 - 188      |
| 13C8 PFOS               | 122              |                  | 51 - 159      |
| 13C6 PFDA               | 113              |                  | 49 - 163      |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110273-1

## LCMS

### Prep Batch: 332570

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-110273-1        | 52-74_POET_Pre_20221221  | Total/NA  | Water  | 537 IDA |            |
| 410-110273-2        | 52-74_POET_Mid_20221221  | Total/NA  | Water  | 537 IDA |            |
| 410-110273-3        | 52-74_POET_Post_20221221 | Total/NA  | Water  | 537 IDA |            |
| MB 410-332570/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA |            |
| LCS 410-332570/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-332570/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 332827

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-110273-1        | 52-74_POET_Pre_20221221  | Total/NA  | Water  | 537 IDA | 332570     |
| 410-110273-2        | 52-74_POET_Mid_20221221  | Total/NA  | Water  | 537 IDA | 332570     |
| 410-110273-3        | 52-74_POET_Post_20221221 | Total/NA  | Water  | 537 IDA | 332570     |
| MB 410-332570/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA | 332570     |
| LCS 410-332570/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA | 332570     |
| LCSD 410-332570/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA | 332570     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110273-1

**Client Sample ID: 52-74\_POET\_Pre\_20221221**

**Lab Sample ID: 410-110273-1**

Date Collected: 12/21/22 11:18

Matrix: Water

Date Received: 12/22/22 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332570       | QLP7    | ELLE | 01/04/23 15:46       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 332827       | QD9Y    | ELLE | 01/05/23 21:52       |

**Client Sample ID: 52-74\_POET\_Mid\_20221221**

**Lab Sample ID: 410-110273-2**

Date Collected: 12/21/22 11:20

Matrix: Water

Date Received: 12/22/22 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332570       | QLP7    | ELLE | 01/04/23 15:46       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 332827       | QD9Y    | ELLE | 01/05/23 22:03       |

**Client Sample ID: 52-74\_POET\_Post\_20221221**

**Lab Sample ID: 410-110273-3**

Date Collected: 12/21/22 11:22

Matrix: Water

Date Received: 12/22/22 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332570       | QLP7    | ELLE | 01/04/23 15:46       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 332827       | QD9Y    | ELLE | 01/05/23 22:14       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110273-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |



# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110273-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110273-1

---

| Lab Sample ID | Client Sample ID         | Matrix | Collected      | Received       |
|---------------|--------------------------|--------|----------------|----------------|
| 410-110273-1  | 52-74_POET_Pre_20221221  | Water  | 12/21/22 11:18 | 12/22/22 11:00 |
| 410-110273-2  | 52-74_POET_Mid_20221221  | Water  | 12/21/22 11:20 | 12/22/22 11:00 |
| 410-110273-3  | 52-74_POET_Post_20221221 | Water  | 12/21/22 11:22 | 12/22/22 11:00 |

1

2

3

4

5

6

7

8

9

10

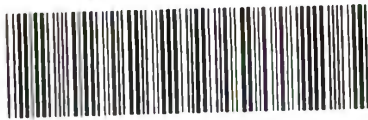
11

12

13

14

15



410-110273 Chain of Custody

# Environmental Analysis Request/Chain of Custody

Acct. # \_\_\_\_\_ Group # \_\_\_\_\_ Sample # \_\_\_\_\_

|   |                                     |   |  |   |  |   |  |                           |  |        |                               |                         |                           |
|---|-------------------------------------|---|--|---|--|---|--|---------------------------|--|--------|-------------------------------|-------------------------|---------------------------|
| Client: <b>Sanborn Head &amp; Associates</b>  |                                     |   |  | <b>Matrix</b>   |  |   |  | <b>Analyses Requested</b> |  |        |                               | <b>For Lab Use Only</b> |                           |
| Project Name/#: N Monmouth PFAS 5197.01   |                                     | Site ID #:  |  | <input type="checkbox"/> Tissue                                 | <input checked="" type="checkbox"/> Ground | <input type="checkbox"/> Surface                                      | <b>Preservation and Filtration Codes</b>         |                           |  |        | SF #: _____                   |                         |                           |
| Project Manager: Andrew Buchy   |                                     | P.O. #: 5197.01   |  | <input type="checkbox"/> Potable                                | <input type="checkbox"/> NPDES             | <input type="checkbox"/> Field Blank                                  |  |                           |  |        | SCR #: _____                  |                         |                           |
| Sampler: Don Kelsey   |                                     | PWSID #:  |  | <input type="checkbox"/> Soil                                   | <input type="checkbox"/> Water             | <input type="checkbox"/> Other:                                       | PFAS 537 Mod with isotope dilution (6 compounds) |                           |  |        | <b>Preservation Codes</b>     |                         |                           |
| Phone #: 603-229-1900   |                                     | Quote #:  |  | Total # of Containers   |  |   |  |                           |  |        | H = HCl      T = Thiosulfate  |                         |                           |
| State where samples were collected: ME  |                                     | For Compliance Yes <input type="checkbox"/> No <input type="checkbox"/> |  | Total # of Containers   |  |   |  |                           |  |        | N = HNO <sub>3</sub> B = NaOH |                         |                           |
| <b>Collection</b>   |                                     |   | Total # of Containers                                    |   |  | S = H <sub>2</sub> SO <sub>4</sub> P = H <sub>3</sub> PO <sub>4</sub> |  |                           |  |        |                               |                         |                           |
| <b>Sample Identification</b>  |                                     |   | Total # of Containers                                    |   |  | F = Field Filtered      O = Other                                     |  |                           |  |        |                               | <b>Remarks</b>          |                           |
| Date  | Time                                | Grab  | Composite  | Soil  | Water                                      | Other:  | Total # of Containers                            |                           |  |        |                               |                         |                           |
| 52-74_POET_Pre_20221221   | 12/21/22                            | 11:18   | X  |   | X  |   | 2  | X                         |  |        |                               |                         | Report to RL (no J-flags) |
| 52-74_POET_Mid_20221221   | ↓                                   | 11:20   | X  |   | X  |   | 2  | X                         |  |        |                               |                         | Report to RL (no J-flags) |
| 52-74_POET_Post_20221221  | ↓                                   | 11:22   | X  |   | X  |   | 2  | X                         |  |        |                               |                         | Report to RL (no J-flags) |
| <b>Turnaround Time Requested (TAT)</b> (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |                                     |   |  | Relinquished by: <i>[Signature]</i>                             |  | Date  | Time   | Received by:              |  | Date   | Time                          |                         |                           |
| (Rush TAT is subject to laboratory approval and surcharges)   |                                     |   |  |   |  | 12/21/22  | 15:45  |                           |  |        |                               |                         |                           |
| Date results are needed   |                                     |   |  | Relinquished by:  |  | Date  | Time   | Received by:              |  | Date   | Time                          |                         |                           |
| Rush results requested by (please check): E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>                          |                                     |   |  |   |  |   |  |                           |  |        |                               |                         |                           |
| E-mail Address:   |                                     |   |  | Relinquished by:  |  | Date  | Time   | Received by:              |  | Date   | Time                          |                         |                           |
| Phone   |                                     |   |  |   |  |   |  |                           |  |        |                               |                         |                           |
| <b>Data Package Options</b> (please check if required)  |                                     |   |  | Relinquished by:  |  | Date  | Time   | Received by:              |  | Date   | Time                          |                         |                           |
| Level I   | <input type="checkbox"/>            | MA MCP  | <input type="checkbox"/>                                 |   |  |   |  |                           |  |        |                               |                         |                           |
| Level II  | <input checked="" type="checkbox"/> | CT RCP  | <input type="checkbox"/>                                 |   |  |   |  |                           |  |        |                               |                         |                           |
| Level VI  | <input type="checkbox"/>            | TX TRRP-13  | <input type="checkbox"/>                                 |   |  |   |  |                           |  |        |                               |                         |                           |
| NJ DKQP   | <input type="checkbox"/>            | NYSDEC Category   | <input type="checkbox"/> A or <input type="checkbox"/> B | Relinquished by Commercial Carrier:                             |  |   |  | Temperature upon receipt  |  | 4.5 °C |                               |                         |                           |
| EQIS 4-file format/SHA  |                                     |   |  | UPS _____ FedEx <input checked="" type="checkbox"/> Other _____ |  |   |  |                           |  |        |                               |                         |                           |
| EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, format: Standard (flat file)            |                                     |   |  |   |  |   |  |                           |  |        |                               |                         |                           |



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-110273-1

Login Number: 110273

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Reiff, Nicole L

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 1/9/2023 9:12:43 PM

**JOB DESCRIPTION**

N Monmouth PFAS

**JOB NUMBER**

410-110024-1

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
1/9/2023 9:12:43 PM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 10 |
| QC Sample Results . . . . .        | 11 |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 16 |
| Sample Summary . . . . .           | 17 |
| Chain of Custody . . . . .         | 18 |
| Receipt Checklists . . . . .       | 19 |



# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110024-1

## Qualifiers

### LCMS

| Qualifier | Qualifier Description                                     |
|-----------|---|
| I         | Value is EMPC (estimated maximum possible concentration). |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110024-1

---

**Job ID: 410-110024-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative  
410-110024-1**

**Receipt**

The samples were received on 12/21/2022 11:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.6°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110024-1

## Client Sample ID: 52-77\_POET\_Pre\_20221220

Lab Sample ID: 410-110024-1

| Analyte                             | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)     | 1.9    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)       | 9.6    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS) | 3.1    | I         | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-77\_POET\_Mid\_20221220

Lab Sample ID: 410-110024-2

| Analyte                             | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 4.8    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-77\_POET\_Post\_20221220

Lab Sample ID: 410-110024-3

| Analyte                             | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)     | 3.6    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)       | 6.2    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS) | 33     |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110024-1

**Client Sample ID: 52-77\_POET\_Pre\_20221220**

**Lab Sample ID: 410-110024-1**

Date Collected: 12/20/22 14:44

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 1.9       |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 01:06 | 1       |
| Perfluorooctanoic acid (PFOA)        | 9.6       |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 01:06 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 01:06 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 01:06 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 3.1       | I         | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 01:06 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 01:06 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 96        |           | 31 - 182 |     |      |   | 01/03/23 17:22 | 01/07/23 01:06 | 1       |
| 13C8 PFOA                            | 96        |           | 48 - 162 |     |      |   | 01/03/23 17:22 | 01/07/23 01:06 | 1       |
| 13C9 PFNA                            | 101       |           | 51 - 167 |     |      |   | 01/03/23 17:22 | 01/07/23 01:06 | 1       |
| 13C3 PFHxS                           | 97        |           | 28 - 188 |     |      |   | 01/03/23 17:22 | 01/07/23 01:06 | 1       |
| 13C8 PFOS                            | 105       |           | 51 - 159 |     |      |   | 01/03/23 17:22 | 01/07/23 01:06 | 1       |
| 13C6 PFDA                            | 89        |           | 49 - 163 |     |      |   | 01/03/23 17:22 | 01/07/23 01:06 | 1       |

**Client Sample ID: 52-77\_POET\_Mid\_20221220**

**Lab Sample ID: 410-110024-2**

Date Collected: 12/20/22 14:47

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 01:17 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 01:17 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 01:17 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 01:17 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 4.8       |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 01:17 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 01/03/23 17:22 | 01/07/23 01:17 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 94        |           | 31 - 182 |     |      |   | 01/03/23 17:22 | 01/07/23 01:17 | 1       |
| 13C8 PFOA                            | 89        |           | 48 - 162 |     |      |   | 01/03/23 17:22 | 01/07/23 01:17 | 1       |
| 13C9 PFNA                            | 110       |           | 51 - 167 |     |      |   | 01/03/23 17:22 | 01/07/23 01:17 | 1       |
| 13C3 PFHxS                           | 94        |           | 28 - 188 |     |      |   | 01/03/23 17:22 | 01/07/23 01:17 | 1       |
| 13C8 PFOS                            | 106       |           | 51 - 159 |     |      |   | 01/03/23 17:22 | 01/07/23 01:17 | 1       |
| 13C6 PFDA                            | 93        |           | 49 - 163 |     |      |   | 01/03/23 17:22 | 01/07/23 01:17 | 1       |

**Client Sample ID: 52-77\_POET\_Post\_20221220**

**Lab Sample ID: 410-110024-3**

Date Collected: 12/20/22 14:50

Matrix: Water

Date Received: 12/21/22 11:40

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 3.6    |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 01:29 | 1       |
| Perfluorooctanoic acid (PFOA)        | 6.2    |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 01:29 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 01:29 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 01:29 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 33     |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 01:29 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7   |           | 1.7 |     | ng/L |   | 01/03/23 17:22 | 01/07/23 01:29 | 1       |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110024-1

Client Sample ID: 52-77\_POET\_Post\_20221220

Lab Sample ID: 410-110024-3

Date Collected: 12/20/22 14:50

Matrix: Water

Date Received: 12/21/22 11:40

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C4 PFHpA              | 102              |                  | 31 - 182      | 01/03/23 17:22  | 01/07/23 01:29  | 1              |
| 13C8 PFOA               | 99               |                  | 48 - 162      | 01/03/23 17:22  | 01/07/23 01:29  | 1              |
| 13C9 PFNA               | 113              |                  | 51 - 167      | 01/03/23 17:22  | 01/07/23 01:29  | 1              |
| 13C3 PFHxS              | 103              |                  | 28 - 188      | 01/03/23 17:22  | 01/07/23 01:29  | 1              |
| 13C8 PFOS               | 110              |                  | 51 - 159      | 01/03/23 17:22  | 01/07/23 01:29  | 1              |
| 13C6 PFDA               | 104              |                  | 49 - 163      | 01/03/23 17:22  | 01/07/23 01:29  | 1              |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110024-1

**Method: 537 IDA - EPA 537 Isotope Dilution**

**Matrix: Water**

**Prep Type: Total/NA**

**Percent Isotope Dilution Recovery (Acceptance Limits)**

| Lab Sample ID      | Client Sample ID         | C4PFHA<br>(31-182) | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
|--------------------|--------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 410-110024-1       | 52-77_POET_Pre_20221220  | 96                 | 96                 | 101                | 97                 | 105                | 89                 |
| 410-110024-2       | 52-77_POET_Mid_20221220  | 94                 | 89                 | 110                | 94                 | 106                | 93                 |
| 410-110024-3       | 52-77_POET_Post_20221220 | 102                | 99                 | 113                | 103                | 110                | 104                |
| LCS 410-332220/2-A | Lab Control Sample       | 108                | 102                | 112                | 104                | 112                | 95                 |
| LCS 410-332220/3-A | Lab Control Sample Dup   | 101                | 97                 | 107                | 105                | 110                | 99                 |
| MB 410-332220/1-A  | Method Blank             | 110                | 105                | 111                | 115                | 112                | 101                |

**Surrogate Legend**

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110024-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-332220/1-A**

**Matrix: Water**

**Analysis Batch: 333356**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 332220**

| Analyte                              | MB     | MB        | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |     |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0   |           | 2.0 |     | ng/L |   | 01/03/23 17:22 | 01/06/23 21:23 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 110       |           | 31 - 182 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C8 PFOA        | 105       |           | 48 - 162 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C9 PFNA        | 111       |           | 51 - 167 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C3 PFHxS       | 115       |           | 28 - 188 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C8 PFOS        | 112       |           | 51 - 159 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |
| 13C6 PFDA        | 101       |           | 49 - 163 | 01/03/23 17:22 | 01/06/23 21:23 | 1       |

**Lab Sample ID: LCS 410-332220/2-A**

**Matrix: Water**

**Analysis Batch: 333356**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 332220**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
|                                      |             |            |               |      |   |      |             |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 25.7       |               | ng/L |   | 100  | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 28.2       |               | ng/L |   | 110  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 23.0       |               | ng/L |   | 99   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.9       |               | ng/L |   | 101  | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 26.4       |               | ng/L |   | 103  | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 108       |           | 31 - 182 |
| 13C8 PFOA        | 102       |           | 48 - 162 |
| 13C9 PFNA        | 112       |           | 51 - 167 |
| 13C3 PFHxS       | 104       |           | 28 - 188 |
| 13C8 PFOS        | 112       |           | 51 - 159 |
| 13C6 PFDA        | 95        |           | 49 - 163 |

**Lab Sample ID: LCSD 410-332220/3-A**

**Matrix: Water**

**Analysis Batch: 333356**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 332220**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-----------|
|                                      |             |             |                |      |   |      |             |     |           |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 26.7        |                | ng/L |   | 104  | 51 - 145    | 4   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 27.0        |                | ng/L |   | 105  | 61 - 139    | 4   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 21.6        |                | ng/L |   | 93   | 58 - 134    | 6   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 23.1        |                | ng/L |   | 98   | 45 - 150    | 3   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 27.0        |                | ng/L |   | 105  | 56 - 138    | 2   | 30        |

Eurofins Lancaster Laboratories Environment Testing, LLC

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110024-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 101              |                  | 31 - 182      |
| 13C8 PFOA               | 97               |                  | 48 - 162      |
| 13C9 PFNA               | 107              |                  | 51 - 167      |
| 13C3 PFHxS              | 105              |                  | 28 - 188      |
| 13C8 PFOS               | 110              |                  | 51 - 159      |
| 13C6 PFDA               | 99               |                  | 49 - 163      |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



# QC Association Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110024-1

## LCMS

### Prep Batch: 332220

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-110024-1        | 52-77_POET_Pre_20221220  | Total/NA  | Water  | 537 IDA |            |
| 410-110024-2        | 52-77_POET_Mid_20221220  | Total/NA  | Water  | 537 IDA |            |
| 410-110024-3        | 52-77_POET_Post_20221220 | Total/NA  | Water  | 537 IDA |            |
| MB 410-332220/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA |            |
| LCS 410-332220/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-332220/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 333356

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-110024-1        | 52-77_POET_Pre_20221220  | Total/NA  | Water  | 537 IDA | 332220     |
| 410-110024-2        | 52-77_POET_Mid_20221220  | Total/NA  | Water  | 537 IDA | 332220     |
| 410-110024-3        | 52-77_POET_Post_20221220 | Total/NA  | Water  | 537 IDA | 332220     |
| MB 410-332220/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA | 332220     |
| LCS 410-332220/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA | 332220     |
| LCSD 410-332220/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA | 332220     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-110024-1

**Client Sample ID: 52-77\_POET\_Pre\_20221220**

**Lab Sample ID: 410-110024-1**

Date Collected: 12/20/22 14:44

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR          | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D          | ELLE | 01/07/23 01:06       |

**Client Sample ID: 52-77\_POET\_Mid\_20221220**

**Lab Sample ID: 410-110024-2**

Date Collected: 12/20/22 14:47

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR          | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D          | ELLE | 01/07/23 01:17       |

**Client Sample ID: 52-77\_POET\_Post\_20221220**

**Lab Sample ID: 410-110024-3**

Date Collected: 12/20/22 14:50

Matrix: Water

Date Received: 12/21/22 11:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 332220       | K9VR          | ELLE | 01/03/23 17:22       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 333356       | PY4D          | ELLE | 01/07/23 01:29       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110024-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110024-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-110024-1

---

| Lab Sample ID | Client Sample ID         | Matrix | Collected      | Received       |
|---------------|--------------------------|--------|----------------|----------------|
| 410-110024-1  | 52-77_POET_Pre_20221220  | Water  | 12/20/22 14:44 | 12/21/22 11:40 |
| 410-110024-2  | 52-77_POET_Mid_20221220  | Water  | 12/20/22 14:47 | 12/21/22 11:40 |
| 410-110024-3  | 52-77_POET_Post_20221220 | Water  | 12/20/22 14:50 | 12/21/22 11:40 |

1

2

3

4

5

6

7

8

9

10

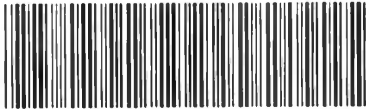
11

12

13

14

15



410-110024 Chain of Custody

# Environmental Analysis Request/Chain of Custody

5

Acct # \_\_\_\_\_ Group # \_\_\_\_\_ Sample # \_\_\_\_\_

|   |                                      |   |                          |   |  |                                      |   |   |  |      |  |                           |  |
|---|--------------------------------------|---|--------------------------|---|--|--------------------------------------|---|---|--|------|--|---------------------------|--|
| Client: <b>Sanborn Head &amp; Associates</b>  |                                      |   |                          | <b>Matrix</b>   |  |                                      |   | <b>Analyses Requested</b>                   |  |      |  | <b>For Lab Use Only</b>   |  |
| Project Name/#: N. Monmouth PFAS 5197.01  |                                      | Site ID #:  |                          | <input type="checkbox"/> Tissue                                 | <input checked="" type="checkbox"/> Ground | <input type="checkbox"/> Surface     | <b>Preservation and Filtration Codes</b>                |   |  |      | SF #: _____  |                           |  |
| Project Manager: Andrew Buchy   |                                      | P.O. #: 5197.01   |                          | <input type="checkbox"/> Potable                                | <input type="checkbox"/> NPDES             | <input type="checkbox"/> Field Blank |   |   |  |      | SCR #: _____   |                           |  |
| Sampler: Don Kelsey   |                                      | PWSID #:  |                          | <input type="checkbox"/> Soil                                   | <input type="checkbox"/> Water             | <input type="checkbox"/> Other:      |   |   |  |      | <b>Preservation Codes</b><br>H = HCl      T = Thiosulfate<br>N = HNO <sub>3</sub> B = NaOH<br>S = H <sub>2</sub> SO <sub>4</sub> P = H <sub>3</sub> PO <sub>4</sub><br>F = Field Filtered      O = Other |                           |  |
| Phone #: 603-229-1900   |                                      | Quote #:  |                          |   |  |                                      |   |   |  |      |  |                           |  |
| State where samples were collected: ME  |                                      | For Compliance Yes <input type="checkbox"/> No <input type="checkbox"/> |                          |   |  |                                      |   |   |  |      |  |                           |  |
| <b>Sample Identification</b>  |                                      | <b>Collection</b>   |                          | <input type="checkbox"/> Sediment                               | <input type="checkbox"/> Composite         | <b>Total # of Containers</b>         | <b>PFAS 537 Mod with isotope dilution (6 compounds)</b> |   |  |      | <b>Remarks</b>   |                           |  |
|   | Date                                 | Time  | Grab                     |   |  |                                      |   |   |  |      |  |                           |  |
| 52-77_POET_Pre_20221220   | 12/20/2022                           | 14:11   | X                        |   |  | 2                                    | X   |   |  |      |  | Report to RL (no J-flags) |  |
| 52-77_POET_Mid_20221220   | 12/20/2022                           | 14:17   | X                        |   |  | 2                                    | X   |   |  |      |  | Report to RL (no J-flags) |  |
| 52-77_POET_Post_20221220  | 12/20/2022                           | 14:40   | X                        |   |  | 2                                    | X   |   |  |      |  | Report to RL (no J-flags) |  |
| <b>Turnaround Time Requested (TAT)</b> (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |                                      | (Rush TAT is subject to laboratory approval and surcharges)             |                          | Relinquished by: <i>[Signature]</i>                             |  | Date                                 | Time  | Received by:                                |  | Date | Time   |                           |  |
| Date results are needed:  |                                      |   |                          | Relinquished by:  |  | Date                                 | Time  | Received by:                                |  | Date | Time   |                           |  |
| Rush results requested by (please check): E-Mail <input type="checkbox"/> Phone <input type="checkbox"/>                          |                                      |   |                          | Relinquished by:  |  | Date                                 | Time  | Received by:                                |  | Date | Time   |                           |  |
| E-mail Address:   |                                      |   |                          | Relinquished by:  |  | Date                                 | Time  | Received by:                                |  | Date | Time   |                           |  |
| Phone:  |                                      |   |                          | Relinquished by:  |  | Date                                 | Time  | Received by:                                |  | Date | Time   |                           |  |
| <b>Data Package Options</b> (please check if required)  |                                      |   |                          | Relinquished by:  |  | Date                                 | Time  | Received by:                                |  | Date | Time   |                           |  |
| Level I   | <input type="checkbox"/>             | MA MCP  | <input type="checkbox"/> | Relinquished by:  |  | Date                                 | Time  | Received by:                                |  | Date | Time   |                           |  |
| Level II  | <input checked="" type="checkbox"/>  | CT RCP  | <input type="checkbox"/> | Relinquished by:  |  | Date                                 | Time  | Received by: <i>[Signature]</i>             |  | Date | Time   |                           |  |
| Level VI  | <input type="checkbox"/>             | TX TRRP-13  | <input type="checkbox"/> | Relinquished by:  |  | Date                                 | Time  | Received by:                                |  | Date | Time   |                           |  |
| NJ DKQP   | <input type="checkbox"/>             | NYSDEC Category   | <input type="checkbox"/> | Relinquished by Commercial Carrier:                             |  |                                      |   | Temperature upon receipt: <i>2.9/2.6</i> °C |  |      |  |                           |  |
| EQIS 4-file format/SHA  | <input type="checkbox"/>             |   |                          | UPS _____ FedEx <input checked="" type="checkbox"/> Other _____ |  |                                      |   |   |  |      |  |                           |  |
| <b>EDD Required?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  | If yes, format: Standard (flat file) |   |                          |   |  |                                      |   |   |  |      |  |                           |  |



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-110024-1

**Login Number: 110024**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: McBeth, Jessica**

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.             | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen).        | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen). | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.  | True   |         |
| There are no discrepancies between the containers received and the COC.                    | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                       | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?                | N/A    |         |



 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 2/10/2023 9:15:09 AM

**JOB DESCRIPTION**

N Monmouth PFAS/5197.01

**JOB NUMBER**

410-112896-1



## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
2/10/2023 9:15:09 AM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 10 |
| QC Sample Results . . . . .        | 11 |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 16 |
| Sample Summary . . . . .           | 17 |
| Chain of Custody . . . . .         | 18 |
| Receipt Checklists . . . . .       | 19 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112896-1

### Qualifiers

#### LCMS

| Qualifier | Qualifier Description                                     |
|-----------|---|
| I         | Value is EMPC (estimated maximum possible concentration). |

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112896-1

---

**Job ID: 410-112896-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative  
410-112896-1**

**Receipt**

The samples were received on 1/20/2023 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.4°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112896-1

## Client Sample ID: 52-77\_PRE\_20230119

Lab Sample ID: 410-112896-1

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 3.1    |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 15     |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 1.7    |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 3.1    | I         | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-77\_MID\_20230119

Lab Sample ID: 410-112896-2

No Detections.

## Client Sample ID: 52-77\_POST\_20230119

Lab Sample ID: 410-112896-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112896-1

**Client Sample ID: 52-77\_PRE\_20230119**

**Lab Sample ID: 410-112896-1**

Date Collected: 01/19/23 14:30

Matrix: Water

Date Received: 01/20/23 09:30

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 3.1       |           | 1.6      |     | ng/L |   | 02/02/23 07:14 | 02/10/23 05:03 | 1       |
| Perfluorooctanoic acid (PFOA)        | 15        |           | 1.6      |     | ng/L |   | 02/02/23 07:14 | 02/10/23 05:03 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.6      |           | 1.6      |     | ng/L |   | 02/02/23 07:14 | 02/10/23 05:03 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 1.7       |           | 1.6      |     | ng/L |   | 02/02/23 07:14 | 02/10/23 05:03 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 3.1       | I         | 1.6      |     | ng/L |   | 02/02/23 07:14 | 02/10/23 05:03 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.6      |           | 1.6      |     | ng/L |   | 02/02/23 07:14 | 02/10/23 05:03 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 113       |           | 31 - 182 |     |      |   | 02/02/23 07:14 | 02/10/23 05:03 | 1       |
| 13C8 PFOA                            | 108       |           | 48 - 162 |     |      |   | 02/02/23 07:14 | 02/10/23 05:03 | 1       |
| 13C9 PFNA                            | 114       |           | 51 - 167 |     |      |   | 02/02/23 07:14 | 02/10/23 05:03 | 1       |
| 13C3 PFHxS                           | 110       |           | 28 - 188 |     |      |   | 02/02/23 07:14 | 02/10/23 05:03 | 1       |
| 13C8 PFOS                            | 115       |           | 51 - 159 |     |      |   | 02/02/23 07:14 | 02/10/23 05:03 | 1       |
| 13C6 PFDA                            | 109       |           | 49 - 163 |     |      |   | 02/02/23 07:14 | 02/10/23 05:03 | 1       |

**Client Sample ID: 52-77\_MID\_20230119**

**Lab Sample ID: 410-112896-2**

Date Collected: 01/19/23 14:35

Matrix: Water

Date Received: 01/20/23 09:30

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7      |           | 1.7      |     | ng/L |   | 02/02/23 07:14 | 02/10/23 05:14 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7      |           | 1.7      |     | ng/L |   | 02/02/23 07:14 | 02/10/23 05:14 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 02/02/23 07:14 | 02/10/23 05:14 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7      |           | 1.7      |     | ng/L |   | 02/02/23 07:14 | 02/10/23 05:14 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.7      |           | 1.7      |     | ng/L |   | 02/02/23 07:14 | 02/10/23 05:14 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 02/02/23 07:14 | 02/10/23 05:14 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 112       |           | 31 - 182 |     |      |   | 02/02/23 07:14 | 02/10/23 05:14 | 1       |
| 13C8 PFOA                            | 107       |           | 48 - 162 |     |      |   | 02/02/23 07:14 | 02/10/23 05:14 | 1       |
| 13C9 PFNA                            | 108       |           | 51 - 167 |     |      |   | 02/02/23 07:14 | 02/10/23 05:14 | 1       |
| 13C3 PFHxS                           | 111       |           | 28 - 188 |     |      |   | 02/02/23 07:14 | 02/10/23 05:14 | 1       |
| 13C8 PFOS                            | 112       |           | 51 - 159 |     |      |   | 02/02/23 07:14 | 02/10/23 05:14 | 1       |
| 13C6 PFDA                            | 106       |           | 49 - 163 |     |      |   | 02/02/23 07:14 | 02/10/23 05:14 | 1       |

**Client Sample ID: 52-77\_POST\_20230119**

**Lab Sample ID: 410-112896-3**

Date Collected: 01/19/23 14:40

Matrix: Water

Date Received: 01/20/23 09:30

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.6      |           | 1.6      |     | ng/L |   | 02/02/23 07:14 | 02/10/23 05:25 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.6      |           | 1.6      |     | ng/L |   | 02/02/23 07:14 | 02/10/23 05:25 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.6      |           | 1.6      |     | ng/L |   | 02/02/23 07:14 | 02/10/23 05:25 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.6      |           | 1.6      |     | ng/L |   | 02/02/23 07:14 | 02/10/23 05:25 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.6      |           | 1.6      |     | ng/L |   | 02/02/23 07:14 | 02/10/23 05:25 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.6      |           | 1.6      |     | ng/L |   | 02/02/23 07:14 | 02/10/23 05:25 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 114       |           | 31 - 182 |     |      |   | 02/02/23 07:14 | 02/10/23 05:25 | 1       |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112896-1

Client Sample ID: 52-77\_POST\_20230119

Lab Sample ID: 410-112896-3

Date Collected: 01/19/23 14:40

Matrix: Water

Date Received: 01/20/23 09:30

## Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C8 PFOA               | 105              |                  | 48 - 162      | 02/02/23 07:14  | 02/10/23 05:25  | 1              |
| 13C9 PFNA               | 106              |                  | 51 - 167      | 02/02/23 07:14  | 02/10/23 05:25  | 1              |
| 13C3 PFHxS              | 115              |                  | 28 - 188      | 02/02/23 07:14  | 02/10/23 05:25  | 1              |
| 13C8 PFOS               | 109              |                  | 51 - 159      | 02/02/23 07:14  | 02/10/23 05:25  | 1              |
| 13C6 PFDA               | 101              |                  | 49 - 163      | 02/02/23 07:14  | 02/10/23 05:25  | 1              |



# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112896-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID       | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|--------------------|------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                        | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-112896-1       | 52-77_PRE_20230119     | 113   | 108                | 114                | 110                | 115                | 109                |
| 410-112896-2       | 52-77_MID_20230119     | 112   | 107                | 108                | 111                | 112                | 106                |
| 410-112896-3       | 52-77_POST_20230119    | 114   | 105                | 106                | 115                | 109                | 101                |
| LCS 410-340828/3-A | Lab Control Sample     | 109   | 106                | 113                | 108                | 118                | 113                |
| LCS 410-340828/4-A | Lab Control Sample Dup | 115   | 114                | 123                | 115                | 125                | 114                |
| MB 410-340828/1-A  | Method Blank           | 109   | 101                | 114                | 107                | 116                | 107                |

### Surrogate Legend

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112896-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-340828/1-A**  
**Matrix: Water**  
**Analysis Batch: 342963**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 340828**

| Analyte                              | MB     | MB        | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
|                                      | Result | Qualifier |     |     |      |   |                |                |         |
| Perfluoroheptanoic acid (PFHpA)      | <2.0   |           | 2.0 |     | ng/L |   | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0   |           | 2.0 |     | ng/L |   | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0   |           | 2.0 |     | ng/L |   | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0   |           | 2.0 |     | ng/L |   | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0   |           | 2.0 |     | ng/L |   | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0   |           | 2.0 |     | ng/L |   | 02/02/23 07:14 | 02/10/23 03:46 | 1       |

| Isotope Dilution | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
|                  | %Recovery | Qualifier |          |                |                |         |
| 13C4 PFHpA       | 109       |           | 31 - 182 | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| 13C8 PFOA        | 101       |           | 48 - 162 | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| 13C9 PFNA        | 114       |           | 51 - 167 | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| 13C3 PFHxS       | 107       |           | 28 - 188 | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| 13C8 PFOS        | 116       |           | 51 - 159 | 02/02/23 07:14 | 02/10/23 03:46 | 1       |
| 13C6 PFDA        | 107       |           | 49 - 163 | 02/02/23 07:14 | 02/10/23 03:46 | 1       |

**Lab Sample ID: LCS 410-340828/3-A**  
**Matrix: Water**  
**Analysis Batch: 342963**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 340828**

| Analyte                              | Spike Added | LCS    | LCS       | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|
|                                      |             | Result | Qualifier |      |   |      |             |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 22.4   |           | ng/L |   | 88   | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 20.9   |           | ng/L |   | 82   | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 24.3   |           | ng/L |   | 95   | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.9   |           | ng/L |   | 85   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 21.1   |           | ng/L |   | 89   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 21.7   |           | ng/L |   | 85   | 56 - 138    |

| Isotope Dilution | LCS       | LCS       | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C4 PFHpA       | 109       |           | 31 - 182 |
| 13C8 PFOA        | 106       |           | 48 - 162 |
| 13C9 PFNA        | 113       |           | 51 - 167 |
| 13C3 PFHxS       | 108       |           | 28 - 188 |
| 13C8 PFOS        | 118       |           | 51 - 159 |
| 13C6 PFDA        | 113       |           | 49 - 163 |

**Lab Sample ID: LCSD 410-340828/4-A**  
**Matrix: Water**  
**Analysis Batch: 342963**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 340828**

| Analyte                              | Spike Added | LCSD   | LCSD      | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|--------|-----------|------|---|------|-------------|-----|-----------|
|                                      |             | Result | Qualifier |      |   |      |             |     |           |
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 22.9   |           | ng/L |   | 89   | 59 - 145    | 2   | 30        |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 21.0   |           | ng/L |   | 82   | 51 - 145    | 1   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 23.3   |           | ng/L |   | 91   | 61 - 139    | 4   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 19.9   |           | ng/L |   | 85   | 58 - 134    | 0   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 21.4   |           | ng/L |   | 90   | 45 - 150    | 1   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 22.6   |           | ng/L |   | 88   | 56 - 138    | 4   | 30        |

Eurofins Lancaster Laboratories Environment Testing, LLC

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112896-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 115              |                  | 31 - 182      |
| 13C8 PFOA               | 114              |                  | 48 - 162      |
| 13C9 PFNA               | 123              |                  | 51 - 167      |
| 13C3 PFHxS              | 115              |                  | 28 - 188      |
| 13C8 PFOS               | 125              |                  | 51 - 159      |
| 13C6 PFDA               | 114              |                  | 49 - 163      |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112896-1

## LCMS

### Prep Batch: 340828

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-112896-1        | 52-77_PRE_20230119     | Total/NA  | Water  | 537 IDA |            |
| 410-112896-2        | 52-77_MID_20230119     | Total/NA  | Water  | 537 IDA |            |
| 410-112896-3        | 52-77_POST_20230119    | Total/NA  | Water  | 537 IDA |            |
| MB 410-340828/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA |            |
| LCS 410-340828/3-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-340828/4-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 342963

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------|-----------|--------|---------|------------|
| 410-112896-1        | 52-77_PRE_20230119     | Total/NA  | Water  | 537 IDA | 340828     |
| 410-112896-2        | 52-77_MID_20230119     | Total/NA  | Water  | 537 IDA | 340828     |
| 410-112896-3        | 52-77_POST_20230119    | Total/NA  | Water  | 537 IDA | 340828     |
| MB 410-340828/1-A   | Method Blank           | Total/NA  | Water  | 537 IDA | 340828     |
| LCS 410-340828/3-A  | Lab Control Sample     | Total/NA  | Water  | 537 IDA | 340828     |
| LCSD 410-340828/4-A | Lab Control Sample Dup | Total/NA  | Water  | 537 IDA | 340828     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112896-1

**Client Sample ID: 52-77\_PRE\_20230119**

**Lab Sample ID: 410-112896-1**

Date Collected: 01/19/23 14:30

Matrix: Water

Date Received: 01/20/23 09:30

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 340828       | RC3V          | ELLE | 02/02/23 07:14       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 342963       | PY4D          | ELLE | 02/10/23 05:03       |

**Client Sample ID: 52-77\_MID\_20230119**

**Lab Sample ID: 410-112896-2**

Date Collected: 01/19/23 14:35

Matrix: Water

Date Received: 01/20/23 09:30

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 340828       | RC3V          | ELLE | 02/02/23 07:14       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 342963       | PY4D          | ELLE | 02/10/23 05:14       |

**Client Sample ID: 52-77\_POST\_20230119**

**Lab Sample ID: 410-112896-3**

Date Collected: 01/19/23 14:40

Matrix: Water

Date Received: 01/20/23 09:30

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 340828       | RC3V          | ELLE | 02/02/23 07:14       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 342963       | PY4D          | ELLE | 02/10/23 05:25       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112896-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112896-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS/5197.01

Job ID: 410-112896-1

---

| Lab Sample ID | Client Sample ID    | Matrix | Collected      | Received       |
|---------------|---------------------|--------|----------------|----------------|
| 410-112896-1  | 52-77_PRE_20230119  | Water  | 01/19/23 14:30 | 01/20/23 09:30 |
| 410-112896-2  | 52-77_MID_20230119  | Water  | 01/19/23 14:35 | 01/20/23 09:30 |
| 410-112896-3  | 52-77_POST_20230119 | Water  | 01/19/23 14:40 | 01/20/23 09:30 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15





## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-112896-1

Login Number: 112896

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Hartlove, Katie M

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | N/A    |         |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                    | True   |         |
| There are no discrepancies between the containers received and the COC.              | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                 | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |         |

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 12/20/2022 8:22:59 PM

**JOB DESCRIPTION**

N Monmouth PFAS

**JOB NUMBER**

410-107678-1

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
12/20/2022 8:22:59 PM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---



# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 10 |
| QC Sample Results . . . . .        | 11 |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 16 |
| Sample Summary . . . . .           | 17 |
| Chain of Custody . . . . .         | 18 |
| Receipt Checklists . . . . .       | 19 |

## Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107678-1

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107678-1

---

**Job ID: 410-107678-1**

---

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

---

**Job Narrative  
410-107678-1**

**Receipt**

The samples were received on 12/2/2022 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.9°C

**PFAS**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.





# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107678-1

## Client Sample ID: 52-78\_POET\_PRE\_20221130

Lab Sample ID: 410-107678-1

| Analyte                             | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)     | 3.4    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)       | 17     |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS) | 6.4    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-78\_POET\_MID\_20221130

Lab Sample ID: 410-107678-2

| Analyte                             | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 5.7    |           | 1.8 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-78\_POET\_POST\_20221130

Lab Sample ID: 410-107678-3

No Detections.

## Client Sample ID: 52-78\_POET\_POST\_DUP\_20221130

Lab Sample ID: 410-107678-4

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-107678-1

**Client Sample ID: 52-78\_POET\_PRE\_20221130**

**Lab Sample ID: 410-107678-1**

Date Collected: 11/30/22 12:35

Matrix: Water

Date Received: 12/02/22 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 3.4       |           | 1.7      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:56 | 1       |
| Perfluorooctanoic acid (PFOA)        | 17        |           | 1.7      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:56 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:56 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7      |           | 1.7      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:56 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 6.4       |           | 1.7      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:56 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:56 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 110       |           | 31 - 182 |     |      |   | 12/14/22 17:35 | 12/20/22 02:56 | 1       |
| 13C8 PFOA                            | 112       |           | 48 - 162 |     |      |   | 12/14/22 17:35 | 12/20/22 02:56 | 1       |
| 13C9 PFNA                            | 118       |           | 51 - 167 |     |      |   | 12/14/22 17:35 | 12/20/22 02:56 | 1       |
| 13C3 PFHxS                           | 116       |           | 28 - 188 |     |      |   | 12/14/22 17:35 | 12/20/22 02:56 | 1       |
| 13C8 PFOS                            | 115       |           | 51 - 159 |     |      |   | 12/14/22 17:35 | 12/20/22 02:56 | 1       |
| 13C6 PFDA                            | 102       |           | 49 - 163 |     |      |   | 12/14/22 17:35 | 12/20/22 02:56 | 1       |

**Client Sample ID: 52-78\_POET\_MID\_20221130**

**Lab Sample ID: 410-107678-2**

Date Collected: 11/30/22 12:38

Matrix: Water

Date Received: 12/02/22 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.8      |           | 1.8      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 03:07 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.8      |           | 1.8      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 03:07 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.8      |           | 1.8      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 03:07 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.8      |           | 1.8      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 03:07 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 5.7       |           | 1.8      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 03:07 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.8      |           | 1.8      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 03:07 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 115       |           | 31 - 182 |     |      |   | 12/14/22 17:35 | 12/20/22 03:07 | 1       |
| 13C8 PFOA                            | 112       |           | 48 - 162 |     |      |   | 12/14/22 17:35 | 12/20/22 03:07 | 1       |
| 13C9 PFNA                            | 118       |           | 51 - 167 |     |      |   | 12/14/22 17:35 | 12/20/22 03:07 | 1       |
| 13C3 PFHxS                           | 114       |           | 28 - 188 |     |      |   | 12/14/22 17:35 | 12/20/22 03:07 | 1       |
| 13C8 PFOS                            | 114       |           | 51 - 159 |     |      |   | 12/14/22 17:35 | 12/20/22 03:07 | 1       |
| 13C6 PFDA                            | 110       |           | 49 - 163 |     |      |   | 12/14/22 17:35 | 12/20/22 03:07 | 1       |

**Client Sample ID: 52-78\_POET\_POST\_20221130**

**Lab Sample ID: 410-107678-3**

Date Collected: 11/30/22 12:40

Matrix: Water

Date Received: 12/02/22 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.8      |           | 1.8      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 03:18 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.8      |           | 1.8      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 03:18 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.8      |           | 1.8      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 03:18 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.8      |           | 1.8      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 03:18 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.8      |           | 1.8      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 03:18 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.8      |           | 1.8      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 03:18 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 121       |           | 31 - 182 |     |      |   | 12/14/22 17:35 | 12/20/22 03:18 | 1       |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-107678-1

**Client Sample ID: 52-78\_POET\_POST\_20221130**

**Lab Sample ID: 410-107678-3**

Date Collected: 11/30/22 12:40

Matrix: Water

Date Received: 12/02/22 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution (Continued)**

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C8 PFOA               | 120              |                  | 48 - 162      | 12/14/22 17:35  | 12/20/22 03:18  | 1              |
| 13C9 PFNA               | 118              |                  | 51 - 167      | 12/14/22 17:35  | 12/20/22 03:18  | 1              |
| 13C3 PFHxS              | 124              |                  | 28 - 188      | 12/14/22 17:35  | 12/20/22 03:18  | 1              |
| 13C8 PFOS               | 116              |                  | 51 - 159      | 12/14/22 17:35  | 12/20/22 03:18  | 1              |
| 13C6 PFDA               | 105              |                  | 49 - 163      | 12/14/22 17:35  | 12/20/22 03:18  | 1              |

**Client Sample ID: 52-78\_POET\_POST\_DUP\_20221130**

**Lab Sample ID: 410-107678-4**

Date Collected: 11/30/22 12:40

Matrix: Water

Date Received: 12/02/22 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| <i>Analyte</i>                       | <i>Result</i> | <i>Qualifier</i> | <i>RL</i> | <i>MDL</i> | <i>Unit</i> | <i>D</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|--------------------------------------|---------------|------------------|-----------|------------|-------------|----------|-----------------|-----------------|----------------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7          |                  | 1.7       |            | ng/L        |          | 12/14/22 17:35  | 12/20/22 03:29  | 1              |
| Perfluorooctanoic acid (PFOA)        | <1.7          |                  | 1.7       |            | ng/L        |          | 12/14/22 17:35  | 12/20/22 03:29  | 1              |
| Perfluorononanoic acid (PFNA)        | <1.7          |                  | 1.7       |            | ng/L        |          | 12/14/22 17:35  | 12/20/22 03:29  | 1              |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7          |                  | 1.7       |            | ng/L        |          | 12/14/22 17:35  | 12/20/22 03:29  | 1              |
| Perfluorooctanesulfonic acid (PFOS)  | <1.7          |                  | 1.7       |            | ng/L        |          | 12/14/22 17:35  | 12/20/22 03:29  | 1              |
| Perfluorodecanoic acid (PFDA)        | <1.7          |                  | 1.7       |            | ng/L        |          | 12/14/22 17:35  | 12/20/22 03:29  | 1              |

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C4 PFHpA              | 118              |                  | 31 - 182      | 12/14/22 17:35  | 12/20/22 03:29  | 1              |
| 13C8 PFOA               | 108              |                  | 48 - 162      | 12/14/22 17:35  | 12/20/22 03:29  | 1              |
| 13C9 PFNA               | 118              |                  | 51 - 167      | 12/14/22 17:35  | 12/20/22 03:29  | 1              |
| 13C3 PFHxS              | 113              |                  | 28 - 188      | 12/14/22 17:35  | 12/20/22 03:29  | 1              |
| 13C8 PFOS               | 111              |                  | 51 - 159      | 12/14/22 17:35  | 12/20/22 03:29  | 1              |
| 13C6 PFDA               | 104              |                  | 49 - 163      | 12/14/22 17:35  | 12/20/22 03:29  | 1              |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-107678-1

## Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID       | Client Sample ID                 | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|---------------------|----------------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                     |                                  | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-107678-1        | 52-78_POET_PRE_20221130          | 110   | 112                | 118                | 116                | 115                | 102                |
| 410-107678-2        | 52-78_POET_MID_20221130          | 115   | 112                | 118                | 114                | 114                | 110                |
| 410-107678-3        | 52-78_POET_POST_20221130         | 121   | 120                | 118                | 124                | 116                | 105                |
| 410-107678-4        | 52-78_POET_POST_DUP_2022<br>1130 | 118   | 108                | 118                | 113                | 111                | 104                |
| LCS 410-327203/2-A  | Lab Control Sample               | 106   | 104                | 105                | 108                | 108                | 100                |
| LCSD 410-327203/3-A | Lab Control Sample Dup           | 116   | 115                | 122                | 123                | 127                | 109                |
| MB 410-327203/1-A   | Method Blank                     | 117   | 119                | 119                | 119                | 122                | 114                |

### Surrogate Legend

C4PFHA = 13C4 PFHpA  
 C8PFOA = 13C8 PFOA  
 C9PFNA = 13C9 PFNA  
 C3PFHS = 13C3 PFHxS  
 C8PFOS = 13C8 PFOS  
 C6PFDA = 13C6 PFDA

# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-107678-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-327203/1-A**  
**Matrix: Water**  
**Analysis Batch: 328561**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 327203**

| Analyte                              | MB Result | MB Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|--------------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <2.0      |              | 2.0 |     | ng/L |   | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0      |              | 2.0 |     | ng/L |   | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0      |              | 2.0 |     | ng/L |   | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0      |              | 2.0 |     | ng/L |   | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0      |              | 2.0 |     | ng/L |   | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0      |              | 2.0 |     | ng/L |   | 12/14/22 17:35 | 12/20/22 01:38 | 1       |

| Isotope Dilution | MB %Recovery | MB Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|--------------|--------------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 117          |              | 31 - 182 | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| 13C8 PFOA        | 119          |              | 48 - 162 | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| 13C9 PFNA        | 119          |              | 51 - 167 | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| 13C3 PFHxS       | 119          |              | 28 - 188 | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| 13C8 PFOS        | 122          |              | 51 - 159 | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| 13C6 PFDA        | 114          |              | 49 - 163 | 12/14/22 17:35 | 12/20/22 01:38 | 1       |

**Lab Sample ID: LCS 410-327203/2-A**  
**Matrix: Water**  
**Analysis Batch: 328561**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 327203**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 22.8       |               | ng/L |   | 89   | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 25.8       |               | ng/L |   | 101  | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 26.7       |               | ng/L |   | 104  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 22.9       |               | ng/L |   | 98   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 22.4       |               | ng/L |   | 94   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 24.8       |               | ng/L |   | 97   | 56 - 138    |

| Isotope Dilution | LCS %Recovery | LCS Qualifier | Limits   |
|------------------|---------------|---------------|----------|
| 13C4 PFHpA       | 106           |               | 31 - 182 |
| 13C8 PFOA        | 104           |               | 48 - 162 |
| 13C9 PFNA        | 105           |               | 51 - 167 |
| 13C3 PFHxS       | 108           |               | 28 - 188 |
| 13C8 PFOS        | 108           |               | 51 - 159 |
| 13C6 PFDA        | 100           |               | 49 - 163 |

**Lab Sample ID: LCSD 410-327203/3-A**  
**Matrix: Water**  
**Analysis Batch: 328561**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 327203**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 24.3        |                | ng/L |   | 95   | 59 - 145    | 6   | 30        |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 27.4        |                | ng/L |   | 107  | 51 - 145    | 6   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 25.9        |                | ng/L |   | 101  | 61 - 139    | 3   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 22.3        |                | ng/L |   | 96   | 58 - 134    | 2   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 22.1        |                | ng/L |   | 93   | 45 - 150    | 1   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 26.8        |                | ng/L |   | 105  | 56 - 138    | 8   | 30        |

Eurofins Lancaster Laboratories Environment Testing, LLC

# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107678-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCSD</i>      |                  | <i>Limits</i> |
|-------------------------|------------------|------------------|---------------|
|                         | <i>%Recovery</i> | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 116              |                  | 31 - 182      |
| 13C8 PFOA               | 115              |                  | 48 - 162      |
| 13C9 PFNA               | 122              |                  | 51 - 167      |
| 13C3 PFHxS              | 123              |                  | 28 - 188      |
| 13C8 PFOS               | 127              |                  | 51 - 159      |
| 13C6 PFDA               | 109              |                  | 49 - 163      |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-107678-1

## LCMS

### Prep Batch: 327203

| Lab Sample ID       | Client Sample ID             | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------------|-----------|--------|---------|------------|
| 410-107678-1        | 52-78_POET_PRE_20221130      | Total/NA  | Water  | 537 IDA |            |
| 410-107678-2        | 52-78_POET_MID_20221130      | Total/NA  | Water  | 537 IDA |            |
| 410-107678-3        | 52-78_POET_POST_20221130     | Total/NA  | Water  | 537 IDA |            |
| 410-107678-4        | 52-78_POET_POST_DUP_20221130 | Total/NA  | Water  | 537 IDA |            |
| MB 410-327203/1-A   | Method Blank                 | Total/NA  | Water  | 537 IDA |            |
| LCS 410-327203/2-A  | Lab Control Sample           | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-327203/3-A | Lab Control Sample Dup       | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 328561

| Lab Sample ID       | Client Sample ID             | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|------------------------------|-----------|--------|---------|------------|
| 410-107678-1        | 52-78_POET_PRE_20221130      | Total/NA  | Water  | 537 IDA | 327203     |
| 410-107678-2        | 52-78_POET_MID_20221130      | Total/NA  | Water  | 537 IDA | 327203     |
| 410-107678-3        | 52-78_POET_POST_20221130     | Total/NA  | Water  | 537 IDA | 327203     |
| 410-107678-4        | 52-78_POET_POST_DUP_20221130 | Total/NA  | Water  | 537 IDA | 327203     |
| MB 410-327203/1-A   | Method Blank                 | Total/NA  | Water  | 537 IDA | 327203     |
| LCS 410-327203/2-A  | Lab Control Sample           | Total/NA  | Water  | 537 IDA | 327203     |
| LCSD 410-327203/3-A | Lab Control Sample Dup       | Total/NA  | Water  | 537 IDA | 327203     |



# Lab Chronicle

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-107678-1

**Client Sample ID: 52-78\_POET\_PRE\_20221130**

**Lab Sample ID: 410-107678-1**

Date Collected: 11/30/22 12:35

Matrix: Water

Date Received: 12/02/22 09:50

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 327203       | K9VR          | ELLE | 12/14/22 17:35       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 328561       | PY4D          | ELLE | 12/20/22 02:56       |

**Client Sample ID: 52-78\_POET\_MID\_20221130**

**Lab Sample ID: 410-107678-2**

Date Collected: 11/30/22 12:38

Matrix: Water

Date Received: 12/02/22 09:50

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 327203       | K9VR          | ELLE | 12/14/22 17:35       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 328561       | PY4D          | ELLE | 12/20/22 03:07       |

**Client Sample ID: 52-78\_POET\_POST\_20221130**

**Lab Sample ID: 410-107678-3**

Date Collected: 11/30/22 12:40

Matrix: Water

Date Received: 12/02/22 09:50

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 327203       | K9VR          | ELLE | 12/14/22 17:35       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 328561       | PY4D          | ELLE | 12/20/22 03:18       |

**Client Sample ID: 52-78\_POET\_POST\_DUP\_20221130**

**Lab Sample ID: 410-107678-4**

Date Collected: 11/30/22 12:40

Matrix: Water

Date Received: 12/02/22 09:50

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Batch Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 327203       | K9VR          | ELLE | 12/14/22 17:35       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 328561       | PY4D          | ELLE | 12/20/22 03:29       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107678-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |

# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107678-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107678-1

| Lab Sample ID | Client Sample ID             | Matrix | Collected      | Received       |
|---------------|------------------------------|--------|----------------|----------------|
| 410-107678-1  | 52-78_POET_PRE_20221130      | Water  | 11/30/22 12:35 | 12/02/22 09:50 |
| 410-107678-2  | 52-78_POET_MID_20221130      | Water  | 11/30/22 12:38 | 12/02/22 09:50 |
| 410-107678-3  | 52-78_POET_POST_20221130     | Water  | 11/30/22 12:40 | 12/02/22 09:50 |
| 410-107678-4  | 52-78_POET_POST_DUP_20221130 | Water  | 11/30/22 12:40 | 12/02/22 09:50 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



## Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-107678-1

**Login Number: 107678**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: McBeth, Jessica**

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal is intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.             | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen).        | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| WV: Container Temperature is acceptable (<math>\leq 6^{\circ}\text{C}</math>, not frozen). | N/A    |         |
| WV: Container Temperature is recorded.   | N/A    |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.  | True   |         |
| There are no discrepancies between the containers received and the COC.                    | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| There is sufficient vol. for all requested analyses.                                       | True   |         |
| Is the Field Sampler's name present on COC?  | True   |         |
| Sample custody seals are intact.   | N/A    |         |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?                | N/A    |         |



 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Andrew Buchy  
Sanborn Head & Associates Inc  
1015 Virginia Drive  
Suite 100  
Fort Washington, Pennsylvania 19034

Generated 12/22/2022 10:21:11 AM

**JOB DESCRIPTION**

N Monmouth PFAS

**JOB NUMBER**

410-107677-1

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
12/22/2022 10:21:11 AM

Authorized for release by  
Kelly Bauer, Project Manager  
[Kelly.Bauer@et.eurofinsus.com](mailto:Kelly.Bauer@et.eurofinsus.com)  
(717)556-7262

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



---





# Table of Contents

|                                    |    |
|------------------------------------|----|
| Cover Page . . . . .               | 1  |
| Table of Contents . . . . .        | 4  |
| Definitions/Glossary . . . . .     | 5  |
| Case Narrative . . . . .           | 6  |
| Detection Summary . . . . .        | 7  |
| Client Sample Results . . . . .    | 8  |
| Isotope Dilution Summary . . . . . | 10 |
| QC Sample Results . . . . .        | 11 |
| QC Association Summary . . . . .   | 13 |
| Lab Chronicle . . . . .            | 14 |
| Certification Summary . . . . .    | 15 |
| Method Summary . . . . .           | 16 |
| Sample Summary . . . . .           | 17 |
| Chain of Custody . . . . .         | 18 |
| Receipt Checklists . . . . .       | 19 |

# Definitions/Glossary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107677-1

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| 1C             | Result is from the primary column on a dual-column method.  |
| 2C             | Result is from the confirmation column on a dual-column method.   |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107677-1

---

## Job ID: 410-107677-1

---

### Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

#### Narrative

---

#### Job Narrative 410-107677-1

#### Receipt

The samples were received on 12/2/2022 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.9°C

#### Receipt Exceptions

The following samples were received at the laboratory without a sample collection time documented on the chain of custody: 52-79\_POET\_PRE\_20221130 (410-107677-1), 52-79\_POET\_MID\_20221130 (410-107677-2) and 52-79\_POET\_POST\_20221130 (410-107677-3). All sample labels have times but is not shown on COC.

52-79\_POET\_PRE\_20221130 TIME SHOWN 1120  
52-79\_POET\_MID\_20221130 TIME SHOWN 1123  
52-79\_POET\_POST\_20221130 TIME SHOWN 1125

#### PFAS

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

# Detection Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107677-1

## Client Sample ID: 52-79\_POET\_PRE\_20221130

Lab Sample ID: 410-107677-1

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|--------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 21     |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanoic acid (PFOA)        | 130    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 7.8    |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 66     |           | 1.7 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-79\_POET\_MID\_20221130

Lab Sample ID: 410-107677-2

| Analyte                             | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method  | Prep Type |
|-------------------------------------|--------|-----------|-----|-----|------|---------|---|---------|-----------|
| Perfluorooctanesulfonic acid (PFOS) | 5.5    |           | 1.6 |     | ng/L | 1       |   | 537 IDA | Total/NA  |

## Client Sample ID: 52-79\_POET\_POST\_20221130

Lab Sample ID: 410-107677-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107677-1

**Client Sample ID: 52-79\_POET\_PRE\_20221130**

**Lab Sample ID: 410-107677-1**

Date Collected: 11/30/22 11:20

Matrix: Water

Date Received: 12/02/22 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | 21        |           | 1.7      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:23 | 1       |
| Perfluorooctanoic acid (PFOA)        | 130       |           | 1.7      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:23 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7      |           | 1.7      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:23 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | 7.8       |           | 1.7      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:23 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 66        |           | 1.7      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:23 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7      |           | 1.7      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:23 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 111       |           | 31 - 182 |     |      |   | 12/14/22 17:35 | 12/20/22 02:23 | 1       |
| 13C8 PFOA                            | 112       |           | 48 - 162 |     |      |   | 12/14/22 17:35 | 12/20/22 02:23 | 1       |
| 13C9 PFNA                            | 109       |           | 51 - 167 |     |      |   | 12/14/22 17:35 | 12/20/22 02:23 | 1       |
| 13C3 PFHxS                           | 115       |           | 28 - 188 |     |      |   | 12/14/22 17:35 | 12/20/22 02:23 | 1       |
| 13C8 PFOS                            | 111       |           | 51 - 159 |     |      |   | 12/14/22 17:35 | 12/20/22 02:23 | 1       |
| 13C6 PFDA                            | 104       |           | 49 - 163 |     |      |   | 12/14/22 17:35 | 12/20/22 02:23 | 1       |

**Client Sample ID: 52-79\_POET\_MID\_20221130**

**Lab Sample ID: 410-107677-2**

Date Collected: 11/30/22 11:23

Matrix: Water

Date Received: 12/02/22 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result    | Qualifier | RL       | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.6      |           | 1.6      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:34 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.6      |           | 1.6      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:34 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.6      |           | 1.6      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:34 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.6      |           | 1.6      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:34 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 5.5       |           | 1.6      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:34 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.6      |           | 1.6      |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:34 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |     |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C4 PFHpA                           | 104       |           | 31 - 182 |     |      |   | 12/14/22 17:35 | 12/20/22 02:34 | 1       |
| 13C8 PFOA                            | 102       |           | 48 - 162 |     |      |   | 12/14/22 17:35 | 12/20/22 02:34 | 1       |
| 13C9 PFNA                            | 107       |           | 51 - 167 |     |      |   | 12/14/22 17:35 | 12/20/22 02:34 | 1       |
| 13C3 PFHxS                           | 106       |           | 28 - 188 |     |      |   | 12/14/22 17:35 | 12/20/22 02:34 | 1       |
| 13C8 PFOS                            | 110       |           | 51 - 159 |     |      |   | 12/14/22 17:35 | 12/20/22 02:34 | 1       |
| 13C6 PFDA                            | 89        |           | 49 - 163 |     |      |   | 12/14/22 17:35 | 12/20/22 02:34 | 1       |

**Client Sample ID: 52-79\_POET\_POST\_20221130**

**Lab Sample ID: 410-107677-3**

Date Collected: 11/30/22 11:25

Matrix: Water

Date Received: 12/02/22 09:50

**Method: EPA 537 IDA - EPA 537 Isotope Dilution**

| Analyte                              | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <1.7   |           | 1.7 |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:45 | 1       |
| Perfluorooctanoic acid (PFOA)        | <1.7   |           | 1.7 |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:45 | 1       |
| Perfluorononanoic acid (PFNA)        | <1.7   |           | 1.7 |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:45 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <1.7   |           | 1.7 |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:45 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <1.7   |           | 1.7 |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:45 | 1       |
| Perfluorodecanoic acid (PFDA)        | <1.7   |           | 1.7 |     | ng/L |   | 12/14/22 17:35 | 12/20/22 02:45 | 1       |

# Client Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107677-1

**Client Sample ID: 52-79\_POET\_POST\_20221130**

**Lab Sample ID: 410-107677-3**

**Date Collected: 11/30/22 11:25**

**Matrix: Water**

**Date Received: 12/02/22 09:50**

| <i>Isotope Dilution</i> | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|-------------------------|------------------|------------------|---------------|-----------------|-----------------|----------------|
| 13C4 PFHpA              | 119              |                  | 31 - 182      | 12/14/22 17:35  | 12/20/22 02:45  | 1              |
| 13C8 PFOA               | 118              |                  | 48 - 162      | 12/14/22 17:35  | 12/20/22 02:45  | 1              |
| 13C9 PFNA               | 112              |                  | 51 - 167      | 12/14/22 17:35  | 12/20/22 02:45  | 1              |
| 13C3 PFHxS              | 125              |                  | 28 - 188      | 12/14/22 17:35  | 12/20/22 02:45  | 1              |
| 13C8 PFOS               | 127              |                  | 51 - 159      | 12/14/22 17:35  | 12/20/22 02:45  | 1              |
| 13C6 PFDA               | 116              |                  | 49 - 163      | 12/14/22 17:35  | 12/20/22 02:45  | 1              |

# Isotope Dilution Summary

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-107677-1

**Method: 537 IDA - EPA 537 Isotope Dilution**

**Matrix: Water**

**Prep Type: Total/NA**

**Percent Isotope Dilution Recovery (Acceptance Limits)**

| Lab Sample ID       | Client Sample ID         | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                    |                    |                    |                    |
|---------------------|--------------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|                     |                          | C4PFHA<br>(31-182)                                    | C8PFOA<br>(48-162) | C9PFNA<br>(51-167) | C3PFHS<br>(28-188) | C8PFOS<br>(51-159) | C6PFDA<br>(49-163) |
| 410-107677-1        | 52-79_POET_PRE_20221130  | 111   | 112                | 109                | 115                | 111                | 104                |
| 410-107677-2        | 52-79_POET_MID_20221130  | 104   | 102                | 107                | 106                | 110                | 89                 |
| 410-107677-3        | 52-79_POET_POST_20221130 | 119   | 118                | 112                | 125                | 127                | 116                |
| LCS 410-327203/2-A  | Lab Control Sample       | 106   | 104                | 105                | 108                | 108                | 100                |
| LCSD 410-327203/3-A | Lab Control Sample Dup   | 116   | 115                | 122                | 123                | 127                | 109                |
| MB 410-327203/1-A   | Method Blank             | 117   | 119                | 119                | 119                | 122                | 114                |

**Surrogate Legend**

- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- C6PFDA = 13C6 PFDA



# QC Sample Results

Client: Sanborn Head & Associates Inc  
 Project/Site: N Monmouth PFAS

Job ID: 410-107677-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-327203/1-A**  
**Matrix: Water**  
**Analysis Batch: 328561**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 327203**

| Analyte                              | MB Result | MB Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|--------------|-----|-----|------|---|----------------|----------------|---------|
| Perfluoroheptanoic acid (PFHpA)      | <2.0      |              | 2.0 |     | ng/L |   | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| Perfluorooctanoic acid (PFOA)        | <2.0      |              | 2.0 |     | ng/L |   | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| Perfluorononanoic acid (PFNA)        | <2.0      |              | 2.0 |     | ng/L |   | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0      |              | 2.0 |     | ng/L |   | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | <2.0      |              | 2.0 |     | ng/L |   | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| Perfluorodecanoic acid (PFDA)        | <2.0      |              | 2.0 |     | ng/L |   | 12/14/22 17:35 | 12/20/22 01:38 | 1       |

| Isotope Dilution | MB %Recovery | MB Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|--------------|--------------|----------|----------------|----------------|---------|
| 13C4 PFHpA       | 117          |              | 31 - 182 | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| 13C8 PFOA        | 119          |              | 48 - 162 | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| 13C9 PFNA        | 119          |              | 51 - 167 | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| 13C3 PFHxS       | 119          |              | 28 - 188 | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| 13C8 PFOS        | 122          |              | 51 - 159 | 12/14/22 17:35 | 12/20/22 01:38 | 1       |
| 13C6 PFDA        | 114          |              | 49 - 163 | 12/14/22 17:35 | 12/20/22 01:38 | 1       |

**Lab Sample ID: LCS 410-327203/2-A**  
**Matrix: Water**  
**Analysis Batch: 328561**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 327203**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------|-------------|------------|---------------|------|---|------|-------------|
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 22.8       |               | ng/L |   | 89   | 59 - 145    |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 25.8       |               | ng/L |   | 101  | 51 - 145    |
| Perfluorononanoic acid (PFNA)        | 25.6        | 26.7       |               | ng/L |   | 104  | 61 - 139    |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 22.9       |               | ng/L |   | 98   | 58 - 134    |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 22.4       |               | ng/L |   | 94   | 45 - 150    |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 24.8       |               | ng/L |   | 97   | 56 - 138    |

| Isotope Dilution | LCS %Recovery | LCS Qualifier | Limits   |
|------------------|---------------|---------------|----------|
| 13C4 PFHpA       | 106           |               | 31 - 182 |
| 13C8 PFOA        | 104           |               | 48 - 162 |
| 13C9 PFNA        | 105           |               | 51 - 167 |
| 13C3 PFHxS       | 108           |               | 28 - 188 |
| 13C8 PFOS        | 108           |               | 51 - 159 |
| 13C6 PFDA        | 100           |               | 49 - 163 |

**Lab Sample ID: LCSD 410-327203/3-A**  
**Matrix: Water**  
**Analysis Batch: 328561**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 327203**

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|-------------|-----|-----------|
| Perfluoroheptanoic acid (PFHpA)      | 25.6        | 24.3        |                | ng/L |   | 95   | 59 - 145    | 6   | 30        |
| Perfluorooctanoic acid (PFOA)        | 25.6        | 27.4        |                | ng/L |   | 107  | 51 - 145    | 6   | 30        |
| Perfluorononanoic acid (PFNA)        | 25.6        | 25.9        |                | ng/L |   | 101  | 61 - 139    | 3   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 23.3        | 22.3        |                | ng/L |   | 96   | 58 - 134    | 2   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 23.7        | 22.1        |                | ng/L |   | 93   | 45 - 150    | 1   | 30        |
| Perfluorodecanoic acid (PFDA)        | 25.6        | 26.8        |                | ng/L |   | 105  | 56 - 138    | 8   | 30        |

Eurofins Lancaster Laboratories Environment Testing, LLC



# QC Sample Results

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107677-1

## Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

| <i>Isotope Dilution</i> | <i>LCS D LCS D</i> |                  | <i>Limits</i> |
|-------------------------|--------------------|------------------|---------------|
|                         | <i>%Recovery</i>   | <i>Qualifier</i> |               |
| 13C4 PFHpA              | 116                |                  | 31 - 182      |
| 13C8 PFOA               | 115                |                  | 48 - 162      |
| 13C9 PFNA               | 122                |                  | 51 - 167      |
| 13C3 PFHxS              | 123                |                  | 28 - 188      |
| 13C8 PFOS               | 127                |                  | 51 - 159      |
| 13C6 PFDA               | 109                |                  | 49 - 163      |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# QC Association Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107677-1

## LCMS

### Prep Batch: 327203

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-107677-1        | 52-79_POET_PRE_20221130  | Total/NA  | Water  | 537 IDA |            |
| 410-107677-2        | 52-79_POET_MID_20221130  | Total/NA  | Water  | 537 IDA |            |
| 410-107677-3        | 52-79_POET_POST_20221130 | Total/NA  | Water  | 537 IDA |            |
| MB 410-327203/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA |            |
| LCS 410-327203/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA |            |
| LCSD 410-327203/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA |            |

### Analysis Batch: 328561

| Lab Sample ID       | Client Sample ID         | Prep Type | Matrix | Method  | Prep Batch |
|---------------------|--------------------------|-----------|--------|---------|------------|
| 410-107677-1        | 52-79_POET_PRE_20221130  | Total/NA  | Water  | 537 IDA | 327203     |
| 410-107677-2        | 52-79_POET_MID_20221130  | Total/NA  | Water  | 537 IDA | 327203     |
| 410-107677-3        | 52-79_POET_POST_20221130 | Total/NA  | Water  | 537 IDA | 327203     |
| MB 410-327203/1-A   | Method Blank             | Total/NA  | Water  | 537 IDA | 327203     |
| LCS 410-327203/2-A  | Lab Control Sample       | Total/NA  | Water  | 537 IDA | 327203     |
| LCSD 410-327203/3-A | Lab Control Sample Dup   | Total/NA  | Water  | 537 IDA | 327203     |

# Lab Chronicle

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107677-1

**Client Sample ID: 52-79\_POET\_PRE\_20221130**

**Lab Sample ID: 410-107677-1**

**Date Collected: 11/30/22 11:20**

**Matrix: Water**

**Date Received: 12/02/22 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 327203       | K9VR    | ELLE | 12/14/22 17:35       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 328561       | PY4D    | ELLE | 12/20/22 02:23       |

**Client Sample ID: 52-79\_POET\_MID\_20221130**

**Lab Sample ID: 410-107677-2**

**Date Collected: 11/30/22 11:23**

**Matrix: Water**

**Date Received: 12/02/22 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 327203       | K9VR    | ELLE | 12/14/22 17:35       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 328561       | PY4D    | ELLE | 12/20/22 02:34       |

**Client Sample ID: 52-79\_POET\_POST\_20221130**

**Lab Sample ID: 410-107677-3**

**Date Collected: 11/30/22 11:25**

**Matrix: Water**

**Date Received: 12/02/22 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab  | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|------|----------------------|
| Total/NA  | Prep       | 537 IDA      |     |                 | 327203       | K9VR    | ELLE | 12/14/22 17:35       |
| Total/NA  | Analysis   | 537 IDA      |     | 1               | 328561       | PY4D    | ELLE | 12/20/22 02:45       |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107677-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Maine     | State   | 2019012               | 03-12-23        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                              |
|-----------------|-------------|--------|--------------------------------------|
| 537 IDA         | 537 IDA     | Water  | Perfluorodecanoic acid (PFDA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluoroheptanoic acid (PFHpA)      |
| 537 IDA         | 537 IDA     | Water  | Perfluorohexanesulfonic acid (PFHxS) |
| 537 IDA         | 537 IDA     | Water  | Perfluorononanoic acid (PFNA)        |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanesulfonic acid (PFOS)  |
| 537 IDA         | 537 IDA     | Water  | Perfluorooctanoic acid (PFOA)        |



# Method Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107677-1

| Method  | Method Description       | Protocol | Laboratory |
|---------|--------------------------|----------|------------|
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |
| 537 IDA | EPA 537 Isotope Dilution | EPA      | ELLE       |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Sanborn Head & Associates Inc  
Project/Site: N Monmouth PFAS

Job ID: 410-107677-1

| Lab Sample ID | Client Sample ID         | Matrix | Collected      | Received       |
|---------------|--------------------------|--------|----------------|----------------|
| 410-107677-1  | 52-79_POET_PRE_20221130  | Water  | 11/30/22 11:20 | 12/02/22 09:50 |
| 410-107677-2  | 52-79_POET_MID_20221130  | Water  | 11/30/22 11:23 | 12/02/22 09:50 |
| 410-107677-3  | 52-79_POET_POST_20221130 | Water  | 11/30/22 11:25 | 12/02/22 09:50 |

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



# Login Sample Receipt Checklist

Client: Sanborn Head & Associates Inc

Job Number: 410-107677-1

**Login Number: 107677**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: McBeth, Jessica**

| Question   | Answer | Comment                             |
|--|--------|-------------------------------------|
| The cooler's custody seal is intact.   | True   |                                     |
| The cooler or samples do not appear to have been compromised or tampered with.       | True   |                                     |
| Samples were received on ice.  | True   |                                     |
| Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).           | True   |                                     |
| Cooler Temperature is recorded.  | True   |                                     |
| WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).    | N/A    |                                     |
| WV: Container Temperature is recorded.   | N/A    |                                     |
| COC is present.  | True   |                                     |
| COC is filled out in ink and legible.  | True   |                                     |
| COC is filled out with all pertinent information.                                    | True   |                                     |
| There are no discrepancies between the containers received and the COC.              | False  | Refer to Job Narrative for details. |
| Sample containers have legible labels.   | True   |                                     |
| Containers are not broken or leaking.  | True   |                                     |
| Sample collection date/times are provided.   | True   |                                     |
| Appropriate sample containers are used.  | True   |                                     |
| Sample bottles are completely filled.  | True   |                                     |
| There is sufficient vol. for all requested analyses.                                 | True   |                                     |
| Is the Field Sampler's name present on COC?  | True   |                                     |
| Sample custody seals are intact.   | N/A    |                                     |
| VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)? | N/A    |                                     |



## **Appendix C**

### **Proposed POET O&M Plan**

**Appendix C**  
**Proposed Operation & Maintenance Manual**  
**Point of Entry Systems (POET)**

**NORTH MONMOUTH PFAS SITE**  
*North Monmouth, Maine*

Prepared for Tex Tech, Inc.  
File No. 5197.01  
February 15, 2023

# TABLE OF CONTENTS

|     |  |   |
|-----|--|---|
| 1.0 | INTRODUCTION.....                                      | 1 |
| 2.0 | POET SYSTEM MANUAL.....                                | 1 |
| 2.1 | POET System Organization Structure .....               | 1 |
| 2.2 | POET System Description and Startup .....              | 1 |
| 3.0 | SCHEDULED INSPECTION, MAINTENANCE, AND MONITORING..... | 3 |
| 3.1 | POET Monitoring .....                                  | 3 |
| 3.2 | GAC Replacement.....                                   | 4 |
| 4.0 | SYSTEM RECORDS AND PERFORMANCE REPORTING.....          | 5 |



## **1.0 INTRODUCTION**

The purpose of this Operation and Maintenance (O&M) Plan is to provide procedures for installed Point of Entry Treatment (POET) systems on residential wells within the North Monmouth PFAS site in North Monmouth, Maine. The POET systems are installed to treat drinking water from the residential well before use within the dwelling for typical water use (shower/baths, sinks, toilets, hose connections, etc.) through two granular activated carbon (GAC) vessels to treat per- and poly fluoroalkyl substances (PFAS). POET system performance, analytical data, and data evaluation will be performed during system operation and protocols for data analysis are discussed in the O&M plan.

Analytical results of the residential well sampling at the North Monmouth PFAS site were compared to the Maine Interim Standard for PFAS in drinking water of 20 nanograms per liter (ng/L) (equivalent to parts per trillion) for the combined sum of six different PFAS compounds: Perfluorooctanoic Acid (PFOA), Perfluorooctanesulfonic Acid (PFOS), Perfluoroheptanoic Acid (PFHpA), Perfluorononanoic Acid (PFNA), Perfluorodecanoic Acid (PFDA), and Perfluorohexanesulfonic Acid (PFHxS). Residential well systems identified to exceed the Maine Interim Standard were contacted and supplied a POET system. Tex Tech, Inc. (TTI) contracted a local subcontractor, Water Treatment Equipment, Inc (WEI) of Yarmouth, Maine, to install POET treatment systems. A total of twenty-six (26) POET systems have been installed in residences at the North Monmouth PFAS site. Further details are provided in the February 2023 Private Well Sampling and Treatment Summary, North Monmouth PFAS Site, North Monmouth, Maine.

## **2.0 POET SYSTEM MANUAL**

The following section describes the POET system and startup.

### **2.1 POET System Organization Structure**

TTI will retain an authorized contractor for performing general maintenance or troubleshooting (as needed) on the installed POET systems during the period of operation. The authorized contractor will provide coordination of maintenance with the homeowner and TTI, with the assistance of Sanborn Head, will continue performance sampling of system as described later in this manual and reporting of analytical results of performance to the Maine Department of Environmental Protection (MEDEP) and the homeowner.

### **2.2 POET System Description and Startup**

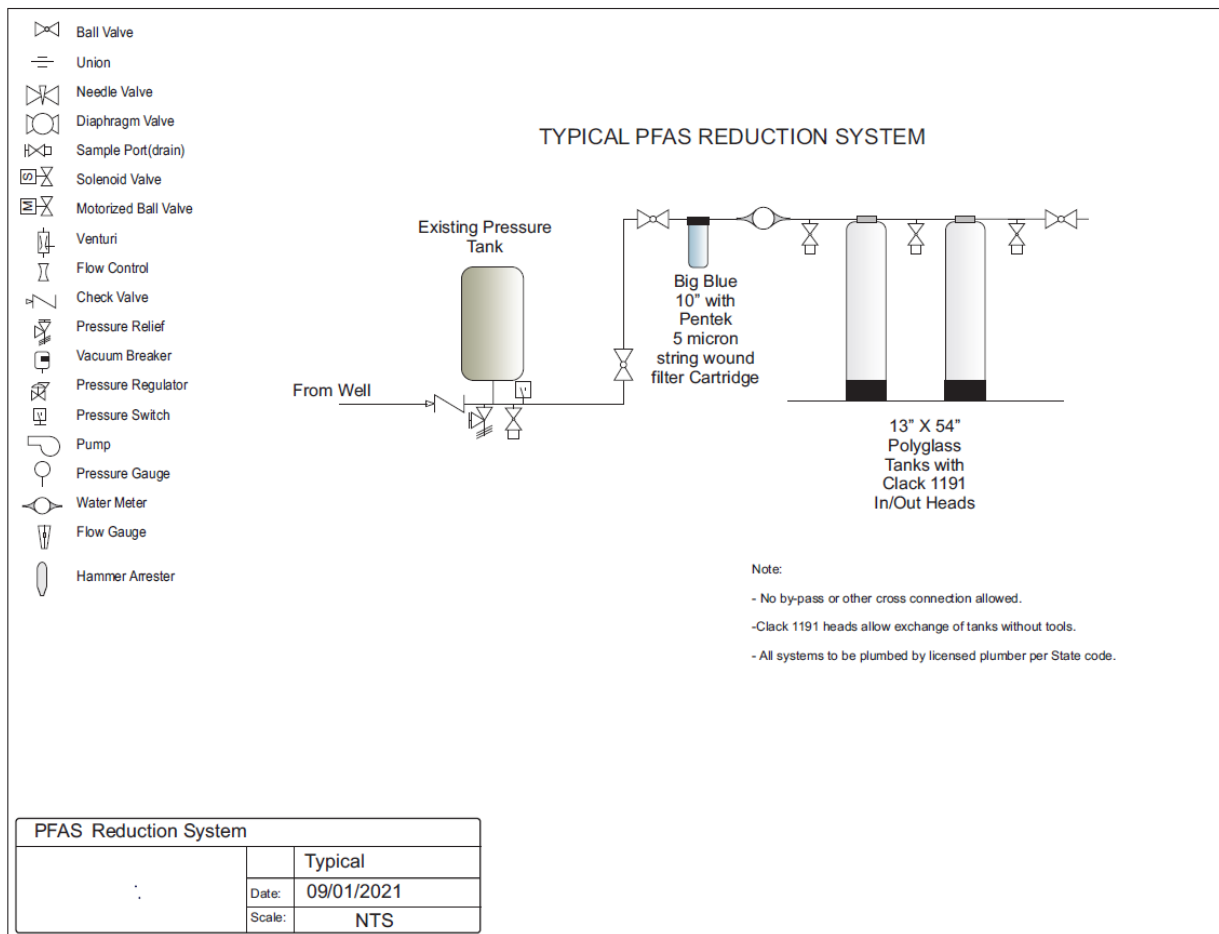
Each POET system operates through pressurized flow from the residential well pump and a pressure tank system within the residence. The pressurized water from the well and pressure tank are plumbed through a totalizing mechanical flow meter, which record the cumulative amount of water (in gallons) passing through the POET unit, which then flowed into the GAC canisters.

The POET systems were installed with three sampling ports. The sample ports provide access for water quality sampling prior to treatment (pre), mid-treatment between the two GAC canisters (mid), and post-treatment (post) to access water before being used by the residence. The POET systems generally include the following equipment that is necessary for overall effectiveness of system:



- Well Expansion Tank (existing before POET installation)
- Pre-sediment filter
- Totalizing Mechanical Flow Meter
- Pre-treatment (raw) sample port
- Lead GAC Canister
- Mid-treatment sample port
- Lag GAC Canister
- Post-treatment sample port

The POET system installation schematic used at the North Monmouth PFAS site is provided in the image below. This schematic has been approved for use by MEDEP.



Approximately one to two months following the installation of the POET system, POET performance efficacy samples were collected from the pre, mid, and post treatment ports. A Sanborn Head representative viewed the POET System and collected water quality samples from the three sample locations. A system flow meter reading was recorded to document the amount water use through the system since installation. The POET systems were then purged for 30 minutes before sampling took place (approximately 50 to 200 gallons of water). Parameters were measured periodically during the purge, including temperature, specific conductance, and pH. Notes were taken in observance of the opacity (by recording color) of the



water and noted the opacity at the end of purging. Following system purge, the mid and post treatment sample ports were purged for an additional five minutes prior to sampling and samples were collected without closing the sample ports following completion of the purge. Samples were collected after the 30 minutes of purge time and placed on ice and shipped to laboratory for analysis.

PFAS were analyzed by U.S. Environmental Protection Agency (USEPA) Method 537.1 (isotope dilution) and included the following constituents:

- Perfluorooctanoic acid (PFOA)
- Perfluorooctane sulfonate (PFOS)
- Perfluoroheptanoic acid (PFHpA)
- Perfluorononanoic acid (PFNA)
- Perfluorodecanoic acid (PFDA)
- Perfluorohexanesulfonic acid (PFHxS)

### **3.0 SCHEDULED INSPECTION, MAINTENANCE, AND MONITORING**

As POET operation continues through normal residential use, the following schedule is anticipated for the initial two years of system operation to ensure POET system components are properly functioning as intended:

- General maintenance visit: Every 12 months
- Filter Replacement: Approximately every 12 months or as needed.
- GAC Canister Replacement: As needed depending on periodic analytical monitoring (described below in Section 3.1)

Following two years of system operation, monitoring and maintenance information will be evaluated to determine an appropriate frequency for subsequent activities.

### **3.1 POET Monitoring**

Residential POET sampling is anticipated to be completed on a semi-annual basis in the months of March and September for the initial two years of operation. Following two years of system operation, monitoring and maintenance information will be evaluated to determine an appropriate frequency for subsequent activities.

The sampling on the semi-annual basis will only include the mid-treatment and post-treatment sample locations. The pre-treatment sample port, or raw location, will be sampled biennially (or every other year). Based on recent pre-treatment samples collected as noted in section 2.2 above the next pre-treatment samples will be collected in September of 2024. Samples will be analyzed for the PFOA, PFOS, PFHpA, PFNA, PFDA, and PFHxS using USEPA Method 537.1 (isotope dilution). Results will be compared to the Maine Interim Standard of 20 ng/L for the sum of the six PFAS analytes described in this section. Totalizer flow readings will also be collected during each monitoring period to track the volume of water passing through the treatment system to support determination of maintenance activity frequency.



Based on review of the results, the following will be completed:

1. Mid and Post treatment sample results are below the Maine Interim Standards: Continue monitoring as described above.
2. Mid sample results are above the Maine Interim Standards, Post sample results are below the Maine Interim Standards, and the elapsed time since the most recent carbon replacement is less than one year or less than the most recent replacement frequency: Collect confirmatory samples to evaluate if carbon replacement is needed for the first carbon cannister.
3. Mid sample results are above the Maine Interim standards after one year of monitoring or after the period of time between prior carbon replacements: Replace carbon in first cannister and move to second position and move second cannister to first position.

Prior to sampling at each residence, the following procedure for purging will be used:

- A totalizer flow meter reading will be recorded to document the cumulative amount of water use through the system since installation.
- Each location will be purged for 30 minutes through an outside spigot. Total gallons purged will vary based on total well yield. Field screening parameters will be measured periodically during the purge, including temperature, specific conductance, and pH.
- Complete an additional 5-minute purge of both the mid and post sample ports included on the POET system.
- Collect a sample from the pre, mid, and/or post sample ports as described in schedule above.
- Samples will be placed on ice and shipped to the laboratory for analysis. Samples will be analyzed for the six Maine regulated PFAS using USEPA Method 537.1 (isotope dilution).

Please note that during initial POET efficacy sampling, some of the residential wells purged dry using the above purging protocol. The purge procedure will be modified at these locations and residential wells that purge dry in the future to avoid having the well pump dry. Purge volumes and times will vary at these locations depending on the volume removed prior to pumping dry previously. Initial purging of the well will be reduced to 75% of the total volume removed that resulted in the well pumping dry but may need to be modified based on well performance.

### **3.2 GAC Replacement**

After review of the analytical results from the previous sampling rounds and flow readings collected during sampling, and the guidelines detailed in Section 3.1 above will be followed to determine if carbon changeout is necessary. TTI will authorize an approved water filtration company to perform necessary carbon replacement or other maintenance activities as they may arise. During the initial two years of system operation, it is anticipated that at least one annual visit will occur to verify the components/functionality of the POET system (outside of sample collection). Following determination that carbon changeout is required in accordance with Section 3.1 above, TTI will authorize an approved water filtration company to perform changeout activities. Carbon changeout will include carbon replacement in the first carbon cannister, moving the first cannister to the second position, and moving the second carbon vessel to the first position. If carbon replacement is determined to be required ahead of the



annual visit, carbon vessel changeout will occur in the same vessel alignment sequence in a separate site visit.

TTI will arrange for an approved water filtration company to coordinate carbon replacement visits with residential homeowners at least ten (10) business days in advance of scheduled activities. A description of maintenance activities will be provided to each homeowner within the residential result letters detailing previous sampling results and during follow-up contact to schedule the next appointment.

#### **4.0 SYSTEM RECORDS AND PERFORMANCE REPORTING**

The results of each monitoring event and/or maintenance period will be shared with MEDEP and the respective homeowner within fifteen (15) business days of receipt of analytical data or maintenance done to the POET system. Overall performance records will be provided to MEDEP each deliverable period.

An annual report summarizing O&M activities will be provided to MEDEP following the September monitoring event in December of each year starting with December 2023. The annual report will include:

- a summary of activities completed,
- summary tables of POET sample results and total recorded flow through the system,
- summary of carbon changeout including disposal/recycling records for spent carbon,
- any recommendations for changes to the O&M activities.

P:\5100s\5197.01\Source Files\PFOA Investigation Report\Text Files\Appendix C\_Proposed POET OM Manual.docx

