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PHASE II COMPREHENSIVE SITE ASSESSMENT INTERIM REPORT #4

Former Municipal Fire Training Facility
155 South Flint Rock Road
Barnstable, Massachusetts
Release Tracking Number (RTN) 4-26179

September 2024
File No. 01.0177641.00

PREPARED FOR:
Barnstable County
Barnstable, Massachusetts

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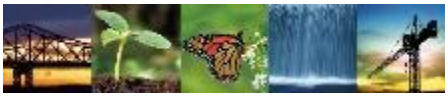

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September 5, 2024
File No. 01.0177641.00

Massachusetts Department of Environmental Protection
Southeast Regional Office
20 Riverside Drive
Lakeville, Massachusetts 02347

Re: Phase II – Comprehensive Site Assessment Interim Report #4
Former Municipal Fire Training Facility
155 South Flint Rock Road
Barnstable, Massachusetts 02630
Release Tracking Number (RTN) 4-26179

To Whom It May Concern:

On behalf of Barnstable County (County), GZA GeoEnvironmental, Inc. (GZA), has prepared this Phase II Comprehensive Site Assessment (CSA) Interim Report for the above-referenced Disposal Site (the Site). This report has been prepared in accordance with the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000) and is subject to the Limitations in **Appendix A**. The MassDEP Comprehensive Response Action Transmittal Form (BWSC108) and this report are being submitted electronically via eDEP in accordance with MassDEP policy; a copy of the BWSC108 form is included as **Appendix B**.

If you have any questions or need further information, please contact David Leone at (781) 278-5766.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Jennifer McKechnie
Senior Project Manager

Matthew M. Smith, LSP
Consultant Reviewer

David E. Leone, LSP-of-record
Principal

John Paquin
Associate Principal, Project Coordinator

cc: Paul Ruszala, Barnstable County, Assets and Infrastructure Manager

Attachments: Report

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1.0 INTRODUCTION

On behalf of Barnstable County (County), GZA GeoEnvironmental, Inc. (GZA) has prepared this Phase II Comprehensive Site Assessment (CSA) Interim Report for the former Municipal Fire Training Facility (MFTF) disposal site located at 155 South Flint Rock Road in Barnstable, Massachusetts. From here forth, the "Site" will be used to refer to the entire disposal site which includes the 155 South Flint Rock Road property as well as certain adjoining and nearby properties impacted by per- and polyfluoroalkyl substances (PFAS) released at the MFTF as a result of the use of Aqueous Film Forming Foam (AFFF) during fire training exercises. Note, the full extent of the disposal site has not yet been defined. The Site was assigned Massachusetts Department of Environmental Protection (MassDEP) Release Tracking Number (RTN) 4-26179 in August 2016 due to elevated concentrations of PFAS detected in environmental media at the Site.

This Phase II CSA Interim Report is subject to the Limitations in **Appendix A**. The Comprehensive Response Action Transmittal Form (BWSC-108) and this report are being submitted electronically via eDEP in accordance with MassDEP policy; a copy of the Transmittal Form is included as **Appendix B**.

1.1 SITE CONTACTS

1.1.1 RP/PRPs

Barnstable County is responsible for the submittal of this report. The contact person at the County is Mr. Paul Ruszala, who can be reached at the following address and telephone number:

Mr. Paul Ruszala
Assets and Infrastructure Manager
Barnstable County
3195 Main Street
Barnstable, Massachusetts 02630
Telephone: 508-419-2860

1.1.2 Site LSP

The Licensed Site Professional (LSP) for the Site is David E. Leone who can be reached at the following address and telephone number:

Mr. David E. Leone (LSP No. 2647)
GZA GeoEnvironmental, Inc.
249 Vanderbilt Avenue
Norwood, Massachusetts 02062
Telephone: 781-278-5766

2.0 BACKGROUND

The following sections present a description of the Site, its regulatory history, and a summary of investigations performed at the Site to date.

2.1 GENERAL DISPOSAL SITE INFORMATION

2.1.1 Disposal Site Location

The address of the MFTF property is 155 South Flint Rock Road in Barnstable, Massachusetts (Assessor's Map 313, Lot 007). The County-Owned MFTF property includes approximately 4.55 acres of upland area and 1.55 acres of pond area (Flintrock Pond). The Universal Transverse Mercator coordinates for the property are 4614847 meters north and 393002 meters east, Zone 19. A Site Locus is included as **Figure 1**, and an Exploration Location Plan is included as **Figure 2**. While the full extent of the disposal site boundary has not yet been defined, PFAS impacts have been detected on the adjoining undeveloped wooded properties which are further described in Section 2.1.3.

The land surface at the MFTF is relatively flat, with the exception of the western portion of the facility, which slopes downward towards Flintrock Pond, and the northern and southeast quadrants that slope downward towards adjacent wooded areas. Surveyed elevations on the MFTF range from approximately 32 to 40 feet above mean sea level, as referenced to the NAVD88 datum.

2.1.2 Site History and Ownership

The MFTF was constructed on previously undeveloped land donated to the Town of Barnstable in 1955. Between 1956 and 2019, the facility was used for public safety training by fire districts, fire departments, and public and private institutions located within and outside Barnstable County. In 1983, the property was acquired by the County. Structures at the property included an administrative building (used for classrooms and offices), a storage building, a supply building used for classes, a two-story concrete burn building, four concrete burn pits used for fire training purposes, a leaching pit (later replaced with a waste oil/water storage tank), and several fuel oil tanks as shown on the historic plan included as **Appendix C**. As described on the capecod.gov website, the training exercises were principally overseen by the Hyannis Fire Department between 1956 and 1986. After 1986, oversight was turned over to the County. The website further notes that the County never purchased AFFF and has no records of when it came into use at the MFTF; instead, the individual fire departments using the MFTF typically brought their own firefighting foams and supplies to the facility in their own apparatuses for use in training exercises. The foam used at the MFTF until the mid-1970s was reportedly protein foam. Starting in the 1970s, AFFF came into use. Foam training exercises continued at the MFTF through approximately 2009, when the use of foam at the facility was banned by the County. Water training exercises at the MFTF facility continued until 2019.

As part of response actions for a separate petroleum related RTN (4-190) in the late 1980s/1990s, three of the burn pits were demolished onsite and the fourth was capped with cement. Additionally, the fuel oil tank and waste oil/water storage tank were removed. In 2021, as part of remedial activities for RTN 4-26179, the former burn building and other fire training props and features were demolished and removed from the facility. The only structures that remain at the facility include the administrative/equipment storage building, the supply building, the storage shed, two fabric Quonset-style sheds used for storage, a small concrete building housing one groundwater treatment system, and a shipping container housing the second groundwater treatment system (**Figure 3**). The MFTF property is secured by a chain link fence and locked gate. Utilities servicing the MFTF include municipal water, an underground septic system, aboveground electricity, and telecommunications.

2.1.3 Site Vicinity and Surrounding Land Use

The area surrounding the MFTF property is largely wooded and characteristic of the mid-Cape post-glacial topography: hilly land surfaces dotted with small depressions; some intermittently filled with water. Directly to the west of the

property is Flintrock Pond, which is a kettle pond. A kettle pond is a depression formed by the melting of a mass of glacial ice trapped in glacial deposits; it is considered to be a surface expression of the groundwater table, with no inlets or outlets. West of the facility, beyond Flintrock Pond, lies property owned by the Barnstable Fire District (BFD). Two municipal water supply wells, designated BFD-2 and BFD-5, are located on the BFD property (**Figure 2**). To the north, east, and south of the MFTF property is land owned by the Town of Barnstable. This town-owned land stretches east to another kettle pond named Mary Dunn Pond. Located between the MFTF property and Mary Dunn Pond are three Town of Barnstable municipal water supply wells (designated MD-1, MD-2, and MD-3) known as the Mary Dunn Well Field. A fourth water supply well, MD-4, lies further to the north, but is not currently active. One additional Town of Barnstable municipal water supply well, designated Air-1, is located approximately 600 feet south of Mary Dunn Pond. To the north of the MFTF property are several additional ponds. The two ponds directly north of the property do not have published names and are referred to from here forward as Unnamed Pond West (UNPW) and Unnamed Pond East (UNPE) as shown on **Figure 2**. To the east of these ponds is Little Israel Pond. To the south/southeast of the MFTF property, beyond the Town of Barnstable owned land, is land owned by Commonwealth Electric (which includes an electrical distribution substation) as well as several private industrial properties. Further south is the Cape Cod Gateway Airport (referred to from here forth as the "airport") which is also impacted by PFAS due to releases at the airport, as well as an unknown upgradient PFAS source. To the east of the town-owned land, beyond Mary Dunn Pond, is land owned by the Commonwealth of Massachusetts Division of Fish and Wildlife.

2.1.4 Hydrogeologic Setting

The geology of Cape Cod was predominantly formed during the most recent Pleistocene glaciation, which deposited the Barnstable Outwash Plain deposits within the vicinity of the Site. The Geologic Map of The Hyannis Quadrangle (Oldale, 1974)[1] depicts these deposits as being several hundred feet thick. The deposits are described as gravelly sand with some pebbles to small boulders, which may overlie silt and clay layers in some areas. Based on boring logs available for the Site, the local geological conditions at the Site are generally consistent with the mapped information and consist of an approximately 50 to 70 foot thickness of fine to coarse sand with varying amounts of gravel, underlain by a clay/silt layer. The thickness and continuity of the clay/silt layer is not yet well defined, but was observed to only be several inches thick in several locations (both at the MFTF and south along Airport Way (MW-403D)). The depth to the silt/clay layer was observed to be about 70 feet below ground surface (bgs) at the MFTF property and within the Barnstable Fire District property to the west of the MFTF. The BFD municipal wells (BFD-2 and BFD-5) are set just above this lower permeable silt/clay layer at about 70 feet bgs. To the east of the MFTF, the silt/layer is about 45 to 55 feet bgs, with each of the Mary Dunn municipal wells (MD-1, MD-2, and MD-3) set just above this layer at 50 to 55 feet bgs. Further to the southeast, it appears the depth to the silt/clay layer increases slightly. This lower permeability layer was observed at about 63 feet bgs at municipal well Air-1, which is set to this depth. GZA continues to review available boring logs and other geological information for the airport to compile and analyze the regional geological conditions, including those extending further to the west, south, and southeast. GZA understands that the Maher municipal supply wells (ME-1, ME-2, and ME-3), located approximately 1,000 feet south of the airport and 3,700 feet south of Air-1, have been impacted by PFAS, as has the Mill Creek system with the Mill Creek Marsh located just over 500 feet southeast (downgradient) of the Maher wells.

Regional groundwater flow in the vicinity of the Site is to the east/southeast towards Mill Creek. It is anticipated that the majority of the PFAS migration occurs within the overburden sand layer with the underlying clay/silt layer acting as a lower confining layer. Both the horizontal and vertical gradients at the Site are being influenced by the existing groundwater extraction system at the Site, both at the point of extraction (PRW-4), as well as at the re-injection gallery at the MFTF property where mounding appears to be impacting groundwater flow directions. In addition, horizontal and vertical

[1] Oldale, Robert N., *Geologic Map of the Hyannis Quadrangle, Barnstable County, Cape Cod, Massachusetts*, Commonwealth of Massachusetts Department of Public Works, 1974.

gradients at the Site are also being influenced by pumping from the Mary Dunn and Air-1 municipal supply wells. As discussed further in Section 2.4.3, PFAS distribution at the Site suggests that the direction of the PFAS plume migration shifts from southeast to south, likely due to the influence of groundwater pumping from the Air-1 water supply well. GZA is assessing the impacts (if any) of groundwater pumping from the BFD and Maher municipal supply wells on horizontal and vertical gradients at the Site, as well as on the migration of the PFAS plume. GZA continues to assess whether there are additional factors that may be influencing groundwater conditions at the Site such as re-injection of water at the Barnstable Water Pollution Control Plant which is located approximately a mile to the southwest of the Site.

2.2 DISPOSAL SITE HISTORY

The following sections document the environmental investigations conducted at the Site to date and the regulatory history with respect to the MCP.

2.2.1 Previous RTNs

The MFTF property and/or the Site have been the subject of three previous RTNs, one of which is still open (RTN 4-190). Additionally, a release from an offsite source impacted the Site. As a result of these prior releases and subsequent response actions, numerous monitoring wells were installed and sampled, and other environmental data were generated for the Site. Each of these releases is described briefly below.

2.2.1.1 RTN 4-190

In 1986, a release of No. 2 fuel oil caused by a leak in a subsurface fuel distribution system was discovered at the MFTF property and assigned RTN 4-190 by MassDEP. Early firefighting training (through 1986) included the use and controlled burning of No. 2 diesel/heating oil, which was stored in an 8,000-gallon underground tank and pumped to four concrete burning pits via an underground distribution system (see historic plan in **Appendix C**). Once a fire had been set in a pit and extinguished using water, CO_2, and/or foam, the excess water and oil were drained through a separate pipe system into a leaching pit in the center of the property. The pit was replaced with a holding tank in the 1970s. In July 1986, a leak was discovered in the distribution system between the underground fuel tank and the pits; subsequent assessments indicated that there were localized release areas associated with the southwestern burn pit (referred to as the round pit) as well as the leaching pit. As part of response actions, the underground storage tank and holding tank were removed, three of the four burn pits were demolished and buried onsite, and the fourth burn pit was capped with cement.

In January 1994, a pump and treat system was installed at the MFTF to contain and treat the diesel release utilizing recovery wells identified as RW-1 through RW-6. In September 1999, a release of methyl-tert-butyl-ether (MTBE) was discovered during a quarterly groundwater monitoring event. The source of the MBTE was unknown. An IRA Plan for this separate release was submitted under RTN 4-190; the IRA included utilizing the existing pump and treat system and installing two new recovery wells (designated RW-7 and RW-8) to contain the MTBE plume. A Class A-1 Response Action Outcome Statement (RAO, equivalent to a Permanent Solution without Conditions under the current MCP) was submitted for the MTBE release in June 2001. In May 2001, the County filed a Class C RAO Statement (equivalent to a Temporary Solution under the current MCP) for the petroleum release that included continued monitoring of natural attenuation, and operation of the pump and treat system at reduced capacity. In 2005, the system was shut down due to "inefficiency of treatment and attainment of a stable area of contamination." Barnstable County subsequently operated a C-Sparge-Perozone system, eventually converted to an air sparge system without perozone, intermittently between 2006 and 2009. Prior to June 2024, the last Post-Temporary Solution Status Report associated with RTN 4-190 was submitted in 2018. In June 2024, the previous consultant, BETA, submitted a status report and during that same month, GZA completed a

groundwater monitoring round associated with this RTN to assess current conditions. GZA will file a Periodic Review of the Temporary Solution and Tier Classification Extension within the next several months.

2.2.1.2 RTN 4-937 (Off-Site Upgradient Release)

A chloroform release associated with the Cape Cod Company (aka, the Cape Cod Potato Chip Company), located upgradient of the MFTF, was discovered in 1990 and assigned RTN 4-937 by MassDEP. The chloroform plume was found to extend onto the MFTF property and eastward towards the Mary Dunn wells; however, the Mary Dunn wells were not found to be impacted with chloroform. The Cape Cod Company installed a pump and treat system upgradient of Flintrock Pond, while the Cape Cod Commission agreed to expand the existing groundwater pump and treat system at the MFTF by adding four additional recovery wells (designated RW-4 through RW-6) in an attempt to address both the petroleum release downgradient of the MFTF as well as the chloroform plume from the Cape Cod Company. In January 2003, the Cape Cod Company subsequently filed a Class A-2 RAO Statement (equivalent to a Permanent Solution without Conditions under the current MCP) for the portion of the RTN 4-937 disposal site upgradient (west) of the MFTF in December 1996 and a Class A-2 RAO Statement for the portion of the RTN 4-937 disposal site located on the MFTF and further downgradient (east/southeast).

2.2.1.3 RTN 4-11707

In 1995, a release of heating oil during the removal of a 1,000-gallon heating oil underground storage tank (UST) at the MFTF property was reported to MassDEP and assigned RTN 4-11707. Upon removal of the UST, formerly located to the south of the administrative/equipment storage building, a small hole was observed in the bottom of the UST and fuel-oil impacted soil was observed in the bottom of the excavation. It was then determined that the hole was created during the tank removal after the majority of the heating oil had already been pumped out of the tank. It was believed that less than 10 gallons of oil was released. Approximately 11 cubic yards of impacted soil was excavated and disposed of offsite. A Class A-2 RAO Statement was submitted for the RTN, achieving regulatory closure.

2.2.1.4 RTN 4-20021

In 2006, a stockpile of flares used for training purposes at the MFTF was observed by the LSP for RTN 4-190. Due to the potential for the flares to contain perchlorate, groundwater samples were collected and analyzed for perchlorate. The detected perchlorate concentrations were above the applicable MCP standards at the time and the release was assigned RTN 4-20021. The closest downgradient public supply well (MD-3) was also tested for perchlorate. While perchlorate was not detected in MD-3 at that time, the potential for a Condition of Substantial Release Migration (SRM) existed and thus an Immediate Response Action (IRA) Plan was submitted for the release. IRA activities included restarting the pump and treat system used for RTN 4-190 with modifications to the ion exchange filtration system and installation of new recovery wells (designated PRW-1 through PRW-4). In 2007, the perchlorate RTN was linked to the petroleum RTN 4-190. In 2010, an IRA Completion Statement was submitted for the perchlorate release.

2.2.2 PFAS Release (RTN 4-26179)

2.2.2.1 Initial Assessments

In 2013, the Mary Dunn water supply wells (MD-1, MD-2, and MD-3) were sampled for PFAS analysis in accordance with the EPA's final rule "Revisions to the Unregulated Contaminant Rule for Public Water Systems," which mandated sampling for emerging contaminants. PFAS was detected in all three supply wells. Following PFAS detections in the Mary Dunn wells, Barnstable County initiated response actions at the MFTF. Beginning in 2013, groundwater samples were collected

from the existing Site monitoring wells. As further described below, 21 additional monitoring wells (designated PFW-1 through PFW-6, HSW-1, HSW-6, PC-6A, PC-28 through 33, PC-34S/D, PC-35S/D, PC-36S/D) were installed at various locations and times to assess the nature and extent of PFAS impacted groundwater, including at the MFTF property, near the Mary Dunn wells, near recovery well PRW-4, and downgradient of Flintrock Pond as shown on **Figure 2**. The PFAS compound detected at the highest concentration was perfluorooctane sulfonate (PFOS). The highest PFOS concentrations were detected within the southwestern portion of the MFTF property (termed the Hot Spot area as described further below) and extending eastward towards recovery well PRW-4 (a former perchlorate recovery well; **Table 1A**). In July 2015, the County proactively reactivated the pre-existing pump and treat system using well PRW-4 as the only extraction well in an attempt to contain the PFAS-impacted groundwater plume.

In March 2015, 12 soil borings (designated B1 through B12) were completed to approximately 10 to 12 feet bgs at the MFTF property as shown on **Figure 3**. Note, borings B1, B2, B8, B9, and B10 were completed as shallow monitoring wells PFW-1, PFW-2, PFW-3, PFW-4, and PFW-6, respectively. Monitoring well PFW-5 was installed without an associated boring. A total of 27 soil samples were collected from depths ranging from the ground surface to 10 feet bgs for laboratory analysis of PFAS.[2] The PFAS compound detected at the highest concentrations was again PFOS. PFOS was detected in each soil sample collected with the highest concentration detected in the southwestern corner of the property (sample B3 at 4,900 micrograms per kilogram (µg/kg) collected from a depth of 4 to 8 feet bgs as shown on **Table 2**). This southwestern corner of the property, termed the Hot Spot area, was further assessed with the completion of seven additional borings (designated HS-1 through HS-7) in January 2016 as shown on the historic plan included as **Appendix D**. HS-1 and HS-6 were completed as shallow monitoring wells HSW-1 and HSW-6. The HS borings were completed to approximately 12 feet bgs (approximate water table depth) with the exception of HS-2 and HS-7, where refusal was encountered at 6 feet and 4 feet bgs, respectively. Twenty soil samples were collected and PFOS continued to be the PFAS compound with the most elevated concentrations (maximum of 2,000 µg/kg at 3 to 4 feet bgs at HS-7). Impacts were detected down to the bottom of the borings with the highest concentrations generally detected in the samples collected from 4 to 8 feet bgs as shown on **Table 2**.

As part of the County's initial investigations, Flintrock Pond was also assessed. The use of PFAS-containing AFFF had been historically practiced in the vicinity of the Hot Spot area, adjacent to Flintrock Pond, at what was termed the "Flare Prop" and "Propane Prop" areas. The ground surface in this area slopes down to Flintrock Pond, and thus runoff from the firefighting exercises likely entered the pond. Additionally, the IRA Plan states that "ponding of training water occurs to the northeast of the burn building and eventually runs off the topographic west pitch of the site into the pond." Between March and June 2015, eight pond sediment samples (designated Pond 1S/1D, Pond 2S/D, Pond 3, Pond South, Pond North, and Pond Delta) were collected within approximately 50 feet of the eastern edge of the shoreline as shown on **Figure 3** and summarized on **Table 3**. PFOS was again the most elevated PFAS compound with concentrations ranging from 8.7 µg/kg (sample Pond 3) to 1,100 µg/kg (sample Pond South). Five surface water samples (designated Pond S1/D1, Pond Grab, Pond FR, and Flint Rock Pond) were also collected between June 2015 and December 2016 from the pond.[3] PFOS was again the most elevated PFAS compound within the surface water samples with concentrations of 1,300 to 2,500 nanograms per liter (ng/l) as summarized on **Table 4.**

In addition to Flintrock Pond, surface water samples were also collected from Mary Dunn Pond in July 2016 and May 2017. PFOS was the most elevated PFAS compound with concentrations of 82 ng/L and 150 ng/L, respectively, as summarized in **Table 6.**

Conditions hydraulically upgradient of the MFTF property were also assessed via the sampling of the BFD water supply wells (BFD-2 and BFD-5) in June 2015. PFOS was not detected in the wells. However, a second sampling round in January

[2] No soil samples were collected from boring B11.

[3] Documentation of the collection of these samples (i.e. sample depths) could not be located.

2016 detected PFOS and PFHxS at concentrations of 8 ng/L and 7.8 ng/L, respectively, at BFD-2 and 13 ng/L and 9.8 ng/L, respectively, at BFD-5.

The hydrant and tap water at the MFTF property were also sampled in November 2015, and PFOS was detected at concentrations of 170 ng/L and 300 ng/L, respectively. Thus, the municipal water supply was considered a contributing source of PFAS at the Site through both the on-property septic system and the use of the municipal water during fire training exercises.

In August 2016, MassDEP issued a Notice of Responsibility to Barnstable County and assigned RTN 4-26179 to the PFAS release.

2.2.2.2 IRA Plan: Hot Spot Removal – September 2016

In September 2016, the County filed an IRA Plan that described the PFAS assessment activities that had been conducted to-date (as described above) and presented a plan for the removal of the PFAS-impacted soils from the Hot Spot area. The proposed excavation footprint was approximately 400 square feet, extending to depths between 5 and 10 feet bgs as shown on **Figure 3**. The Hot Spot area soil removal was completed in January 2017. A total of 298 tons of soil was disposed offsite at a Waste Management facility in Taunton, Massachusetts. The bottom foot of the excavation was amended with RemBind Plus, a fine carbon mixture intended to limit migration of organic compounds, including PFAS. The excavation was then backfilled to 1 foot below the designed ground surface elevation and sloped away from Flintrock Pond. A geotextile fabric was placed on the surface and loamy soil was used to bring the excavation area to the ground surface.

Seven post-excavation samples were collected from the side walls and bottom of the excavation and analyzed for PFAS (**Table 2**). PFOS concentrations at the bottom of excavation ranged from 110 to 270 µg/kg, and concentrations on the sidewalls ranged from 180 µg/kg to 460 µg/kg. Additional soil volume from five of the seven sample locations were mixed with RemBind and also submitted for PFAS analysis to evaluate the effectiveness of the RemBind treatment. The results showed a 35% to 83% decrease in PFOS concentrations (**Table 2**).

Following the Hot Spot area excavation, post-excavation groundwater and surface water (Flintrock Pond) monitoring was performed. This monitoring included sampling downgradient well PFW-2, and two upgradient wells, HWS-1 and HWS-6. Note that the original HSW-1 and HSW-6 monitoring wells were removed as part of the excavation activities and then replaced. In subsequent reports, these wells are referred to as HSW-1/HS-1a and HSW-6/HS-2b. The Flintrock Pond surface water samples showed increased PFOS concentrations (1,500 ng/L in April 2017 to 3,500 ng/L in November 2017), as did the downgradient well, PFW-2, (17,000 ng/L in April 2017 and 25,000 ng/L in November 2017; **Table 1A**).

Between December 2016 and February 2018, monthly IRA Status Reports and Remedial Monitoring Reports (RMRs) were submitted to MassDEP. These reports included the post-excavation monitoring results as well as information on the continued operation of the groundwater treatment system. The groundwater extraction system (designated as GWTS-1) was recovering approximately 14 to 35 gallons per minute (gpm; 20,000 to 50,000 gallons per day) of groundwater from well PRW-4. The capture zone of PRW-4 was estimated to be 200 feet at 40 gpm. The extracted groundwater was pumped via two 2-inch-diameter underground force mains to the groundwater treatment system, consisting of two 1,500-pound granular activated carbon (GAC) vessels and metals removal filters located in the treatment building at the MFTF property. The initial pumping rate, as described in the IRA Plan, was approximately 38 gpm. The treated groundwater was discharged to groundwater infiltration chambers located in the north-central area of the MFTF, and spent GAC was transported off-Site for thermal regeneration or destruction.

In May 2018, a Phase I Initial Site Investigation and Tier Classification report was submitted for the Site which classified the Site as Tier I due to the ongoing need for IRA activities.

2.2.2.3 IRA Plan Modification: Improvements to Stormwater and Fire Training Water Control in Hot Spot Area – June 2018

In June 2018, MassDEP issued a *Notice of Audit Findings – Immediate Response Action Field Inspection and Request for IRA Modification/Interim Deadline*, which detailed their May 2018 audit inspection and required corrective actions. While onsite, MassDEP observed "ponding downgradient of the training area and immediately upgradient of the Hot Spot Area." Interviews with facility personnel indicated that ponding occurred from both stormwater and water usage during fire training activities. MassDEP noted that there was only a berm on the topographic downgradient edge of the Hot Spot Area to presumably prevent overland water flow into Flintrock Pond. MassDEP's *Notice of Audit Findings* required the County to submit an IRA Plan Modification which included the installation of drainage control and/or the construction of berms, dikes, or impoundments to prevent storm water and training water from entering the Hot Spot area.

Hot Spot Area Improvements

The County submitted an IRA Modification in late June 2018 to address MassDEP's *Notice of Audit Findings*. The proposed work in the Hot Spot area included the following activities:

- Raising the grade using granular fill to an elevation greater than the surrounding soil and the adjacent paved driveway.
- Covering the area with 3 inches of sand.
- Installing 10-mil polyethylene sheeting and geotextile or approved equivalent over the area.
- Securing the polyethylene sheeting with 3 inches of pea stone.
- Constructing Cape Cod style asphalt berms along the edges of the existing driveway to the northeast of the Hot Spot area.
- Constructing a 6-inch high dense grade berm along the 50 ft wetland buffer located north of the driveway area.

The IRA work was completed in January 2019. The final approved design was included in IRA Status Report #27.

Flintrock Pond Assessments Associated with IRA Activities

As the proposed IRA activities were to be completed in close proximity to Flintrock Pond, a Notice of Intent (NOI) was filed with the Town of Barnstable Conservation Commission. The work was approved; however, the Order of Conditions (OOC) required "new testing results for PFAS in Flintrock Pond" prior to the Hot Spot area improvements and every subsequent six months as a condition of the approval. Surface water and/or sediment sampling was conducted in November 2018 (prior to the Hot Spot area improvements), March 2019, October 2019, and October 2020. Sediment sampling locations are shown on **Figure 3** and summarized in **Table 3**. A brief summary of the sampling events is presented below:

- November 2018: One surface water sample (designated SW-201) was collected approximately 50 feet from the eastern shoreline of Flintrock Pond at approximately 6 to 8 inches below the surface. Six sediment samples (designated SED-1 through SED-6) were collected along two transects extending approximately 50 feet westward from the east shoreline of Flintrock Pond. In addition, a sample of the runoff flowing down the paved driveway towards the pond was collected (designated Overland Runoff).
- March 2019: One surface water sample (designated SW-301) was collected from approximately the same location as in November 2019, and five sediment samples (designated SED-101, SED-201, SED-301, SED-401, and SED-501)

were collected from the same approximate locations as in November 2019. SED-101 was collected from the same location as SED-1, and so on. A sediment sample from the approximate location of SED-6 could not be retrieved due to aquatic vegetation.

- October 2019: Two surface water samples (designated SW-401S, SW-401D) were collected approximately 100 feet from the eastern shoreline of Flintrock Pond at approximately 6 inches and 12 inches below the water surface. There is no documentation of sediment sample collection in October 2019.

- October 2020: Two surface water samples (designated SW-501S, SW-501D) were collected from the same approximate location as sample SW-201 at approximately 6 inches and 36 inches below the water surface. Four additional sediment samples (designated SED-7A, SED-7B, SED-8A, and SED-8B) were collected along two transects located further north than the previous samples in November 2018/March 2019 to provide information from areas not recently assessed.

The PFAS compound detected at the highest concentrations in the surface water and sediment samples continued to be PFOS. In the surface water samples, the PFOS concentrations ranged from 260 ng/L (Oct 2020) to 560 ng/L (October 2019). In the Overland Runoff sample, PFOS was detected at a concentration of 31 ng/L. In the sediment samples, PFOS concentrations were also relatively stable for the two rounds collected at the same locations (November 2018 and November 2019). PFOS concentrations generally increased with increased distance from the shoreline with the highest concentrations at each transect detected at the furthest locations from the shoreline (SED-3 at 170 µg/kg and SED-6 at 280 µg/kg). The northern sampling locations (samples designated SED-7A/B and SED-8A/B) also had elevated PFOS concentrations with a maximum PFOS concentration of 180 µg/kg detected at SED-8A. The analytical results are summarized on **Table 3.**

2.2.2.4 IRA Plan Modification – Groundwater Treatment Expansion & Site Capping – December 2019

In November 2018, MassDEP issued a *Notice of Audit Findings/Compliance and Technical Assistance/Interim Deadline* which detailed their October 2018 audit inspection and required corrective actions. The required corrective actions included:

- An evaluation of the feasibility of expanding the existing groundwater extraction and treatment system;

- Steps to eliminate or minimize breakthrough of the carbon vessels used in the treatment system;

- An evaluation of the feasibility of installing a more robust cap over the Hot Spot Area and Fire Training Area (which was largely vegetated);

- A detailed monitoring plan for quarterly groundwater sampling specifying the well network to be sampled; and

3.0 A SCHEDULE OF THE FIRE TRAINING ACTIVITIES WITH ESTIMATED WATER USAGE TO BE PROVIDED TO MASSDEP.

IRA Status Report #27 included an evaluation of the feasibility of both expanding the existing groundwater treatment system and installing a more robust cap. A short-term expansion of the groundwater treatment system was deemed feasible; however, a more robust cap was not deemed feasible at the time due to the substantial costs associated with engineering, permitting, and construction required to collect and manage the water used for fire training exercises. A

long-term groundwater monitoring plan with quarterly and annual sampling rounds was developed and uploaded to eDEP as a standalone document in May 2019. The monitoring plan included the quarterly monitoring of 12 wells and annual monitoring of these same 12 wells plus an additional 8 wells.

In May 2019, MassDEP issued a *Request for Expedited Immediate Response Action Plan Modification/Interim Deadline-Enforcement Document Number 6694.* The letter required an expedited IRA Plan Modification to include a detailed plan for the expansion of the groundwater treatment system and a detailed plan for capping measures at the Site. The County had suspended the use of water in fire training exercises in April 2019, which MassDEP noted would enable the evaluation and implementation of a cap in the area.

The final IRA Plan Modification was submitted in December 2019. At this time, the County had already rented a second temporary treatment system to expand the current capacity of the system with concurrence from MassDEP. The groundwater from recovery well PRW-4 was being conveyed through two 2-inch ID underground pressurized (force) mains to groundwater treatment system #1 (GWTS #1). GWTS #1 was not capable of effectively treating the high flow rates achieved at PRW-4 (over 50 gpm). Consequently, one of the force mains was connected to the rental treatment system (GWTS #2).

The design of the new cap included paving the entire area within the driveway oval encircling the facility. Stormwater would be routed through a series of drain structures and piping with associated catch basins to a final stormwater discharge structure on the west side of the MFTF.

Soil Analyses in Support of Capping Design

In support of the expanded capping plan design, a series of three different soil exploration programs were completed, as described below. The sampling locations are shown on **Figure 3** and the results are summarized in **Table 2.** The PFAS compound with the most elevated concentrations continued to be PFOS, and thus PFOS concentrations are the focus of the discussions below.

In August 2019, five test pit excavations (TP-1 through TP-5) were conducted for percolation tests and soil evaluation within the area to be capped. Soil samples were also collected from various depths ranging from 0 to 10 feet bgs and submitted for PFAS analysis. PFOS was detected in each soil sample, with the higher concentrations generally detected in the shallower soil samples. The most elevated PFOS concentrations were detected in the shallow samples at TP-1 (360 µg/kg at 0 to 4 feet bgs), located in the northeast corner of the MFTF property, and TP-5 (530 µg/kg at 4 feet bgs), located near the burn building. PFOS concentrations were below 20 µg/kg at the remaining locations.

In May 2020, four borings (SB-101 through SB-104) were advanced. SB-101 through SB-103 were located along the eastern edge of the Hot Spot Area and SB-104 was located near the burn building. The locations were reportedly selected based on historic usage of AFFF. The borings were advanced to approximately 25 to 32 feet bgs, and SB-103 and SB-104 were completed as shallow monitoring wells designated MW-103 and MW-104. Twenty-two soil samples were collected from depths of 2 to 30 feet bgs and submitted for PFAS analysis. PFOS concentrations were highest in the shallow soils at SB-104 (100 µg/kg at 0-2 feet bgs) and generally decreased with depth down to about 20 feet bgs. Soil samples collected from depths of greater than 20 feet bgs were non-detect for PFOS.

In January 2021, 15 soil borings were advanced at the MFTF property (SB-201 through SB-215) to document PFAS concentrations and support the design of the capping and related stormwater management features. SB-201 and SB-215 were completed as monitoring wells MW-201 and MW-215. Twenty-one soil samples were collected from depths of 0 to 10 feet bgs. Similar to the prior explorations, PFOS concentrations were generally highest in the shallow soils with one notable exception at SB-211, located near the burn building, where the highest PFOS concentration was detected at 7.5 to

10 feet bgs (110 µg/kg). The most elevated PFOS concentrations were again detected in the northeastern corner of the property (at SB-202; 170 µg/kg at 2-4 feet bgs) and near the burn building (SB-211 as described in the previous sentence).

Cap Implementation

Between August and October 2021, the capping and stormwater improvements were completed. The former burn building and other fire training apparatuses and features were demolished and removed from the MFTF property. Based on the design plans included in IRA Status Report #60 (Appendix C of that report), the eastern portion of the burn building (referred to as Burn Building 1) was demolished to the top of the foundation and the basement was filled with clean gravel. The western portion of the burn building (referred to as Burn Building 2) does not appear to have had a basement; the first-floor concrete slab was removed, and the footprint was filled with clean gravel. It appears that some of the other concrete pads at the facility also remained in place during the capping activities. Approximately 650 tons of PFAS contaminated demolition debris and materials associated with these structures was transported to and disposed of at the US Ecology / Wayne Disposal, Inc. disposal facility in Belleville, Michigan in September 2021.

Based on the design plans, the excess material excavated from the MFTF property was used to achieve the design grades and elevations and compacted in place. This material was then topped with 3 inches of dense grade crushed stone and 3.5 inches of hot mix asphalt. Approximately 59,000 square feet of the unpaved portions of the MFTF were capped. Stormwater drain structures and piping with associated catch basins, and a Stormceptor (a dual-chamber, prefabricated, underground unit that separates oils, grease, and sediment from stormwater runoff) were installed on the western portion of the MFTF property. A final stormwater discharge structure, consisting of an open pipe with a headwall and a longer, stone-armored channel was also constructed on the west side of the MFTF.

3.1.1.1 Public Involvement Plan Designation

In January 2019, a group of residents in Barnstable submitted a petition requesting that the Site be designated a Public Involvement Plan (PIP) site. Barnstable County designated the Site as a PIP site and notified the petitioners in February 2019. A draft PIP was prepared and presented at the initial public meeting in May 2019. The final PIP was submitted in June 2019. The PIP requires public comment periods for the following draft reports: Phase II CSA, Phase III Remedial Action Plan (RAP), Phase IV Remedy Implementation Plan (RIP), Phase V Remedy Operation, IRA Plan Modifications, IRA Completion reports, and Permanent/Temporary Solutions. The PIP also requires public meetings take place when draft versions of the following reports are distributed: Phase II CSA, Phase III RAP, Phase IV RIP, and IRA Plan Modifications. Additionally, general update public meetings are to be held. We understand that general public status/update meetings have been held since then; the most recent meeting was held on July 25, 2024.

3.2 PHASE II ASSESSMENTS

In March 2022, at the request of the MassDEP, a Phase II Scope of Work (SOW) was submitted for the Site. Phase II assessments completed to-date by the County's former consultant, BETA, have been documented in three Phase II Interim Reports submitted in May 2023, September 2023, and February 2024. The assessments included:

- Surficial soil sampling at the MFTF and adjacent properties to assess potential impacts related to airborne deposition of AFFF;
- Assessments of three ponds in the vicinity of the Site (Flintrock Pond, Mary Dunn Pond, and Unnamed Pond West, located north of the MFTF) via bathymetric surveys, sediment sampling, and/or surface water sampling;

- Further delineation of the PFAS impacts to groundwater via groundwater screening and monitoring well installations; and

- Surveys of the horizontal and vertical elevations of new wells, as well as select existing wells whose vertical accuracy was uncertain.

These assessments are briefly described below.

3.2.1 Shallow Soil Sampling Near the MFTF Property

To assess impacts from possible airborne deposition of AFFF at the MFTF and adjacent properties, a series of surficial soil samples (designated SS-101 to SS-124 and SS-201 to 214) were collected in October 2022 and June 2023 (**Figure 3**). Five of the shallow soil samples (designated SS-201 to SS-204 and SS-214) were collected from the uncapped area on the west side of the MFTF. The remaining samples were collected from six transect lines (A through F) to the east and south of the MFTF extending outwards from the MFTF fence line (the approximate property boundary). Soil samples were collected at 0, 10, 25, 50, and 100 feet from the fence line at each transect. At the three transects closest to the Hot Spot area and former burn building (Transects A, B, and C), an additional sample was collected at 200 feet from the fence line. At each sampling location, soil was collected with a trowel from the top 3 to 6 inches bgs. At most locations, the accumulated leaf litter and organic matter (designated the forest mat) was removed prior to collecting the sample. At several locations, the forest mat itself was sampled as indicated in the sample name (via the abbreviation FM; ex: SS-102 (FM)). At locations closest to the facility (generally within 100 feet of the fence line) an additional sample was collected from 12 to 20 inches bgs. At each 10-foot sample location (i.e. 10 feet from the fence line), soil samples were also collected at 5 feet and 10 feet bgs using a direct push drill rig.

3.2.1.1 Shallow Soil Samples from the West Side of the Facility

In the two soil samples collected to the north and west of the main administrative building (designated SS-201 and SS-202), none of the six PFAS regulated compounds were detected above Method 1 S-1/GW-1 standards. In the three sample locations between the paved portion of the facility and Flintrock Pond (designated SS-203, SS-204, and SS-214), PFOS was detected above its Method 1 S-1/GW-1 standard (2 µg/kg) at two locations (SS-203 and SS-204) with a maximum PFOS concentration of 13 µg/kg detected at SS-204.

3.2.1.2 Transect Results

Along the transect sampling lines, PFOS was the most elevated PFAS compound detected with the highest concentrations generally detected in the samples closest to the fence line (0 feet and 10 feet from the fence line); concentrations generally decreased with distance from the MFTF (**Table 2** and **Figure 3**). The transects with the highest PFOS concentrations were Transect C, located directly east of the burn building (maximum PFOS detection of 180 µg/kg at SS-109 [16 to 20 inches depth]), and Transect D, the northerly adjacent transect (maximum PFOS detection of 180 µg/kg at SS-113 [16 to 20 inches depth]).

The samples collected from 5 feet and 10 feet bgs generally showed lower PFAS concentrations than the shallow samples with maximum PFOS concentrations of 11 µg/kg and 3.2 µg/kg at 5 feet bgs (SS-110) and 10 feet bgs (SS-102), respectively as shown on **Table 2** and **Figure 3.**

3.2.2 Pond Assessments

3.2.2.1 Flintrock Pond

Bathymetry Survey

A bathymetry survey of Flintrock Pond was completed by Steel Associates Marine Consultants, LLC in May 2022. The survey figure was included in the Phase II Interim Status Report #1 (Appendix F) and the bathymetry lines are included on **Figure 3**. The depth of Flintrock Pond at the time of the survey ranged from 1 to 11 feet below the pond surface (28.4 feet as referenced to NAVD88 datum on the day of the survey) with the deepest area observed in the southern portion of the pond. Limited measurements of the pond surface elevation have shown that it fluctuates by up to 2 feet seasonally.

Sediment Samples and Observed Sediment Thickness

Between July and August 2022, 25 sediment samples (FRP-101 through FRP-122, SED-X, SB-FRP 0-1' and SB-FRP 1-2') were collected from Flintrock Pond along two transects: one oriented north to south and one oriented west to east as shown on **Figure 3**. Sediment samples were collected approximately every 50 feet. Samples were collected with a petite ponar dredge, direct push drilling techniques (location SB-FRP only), or a trowel (at shallow locations) and submitted for analysis of PFAS. Select samples were also submitted for analysis of total organic carbon (TOC), pH, and oxidation-reduction potential (ORP). PFOS concentrations ranged from 4.10 µg/kg (FRP-103) to 460 µg/kg (FRP-120) as shown on **Table 3** and **Figure 3**. PFOS concentrations were generally lower on the northern side of the pond. The surficial sediment samples had TOC values in the range of 228,000 to 327,000 milligrams per kilogram (mg/kg). The one sample collected at depth (SB-FRP 1'-2') had a significantly lower TOC value at 5,500 mg/kg. The pH range was slightly acidic (5.35 to 6.25) and oxidation-reduction potential (ORP) values ranged from 174 to 344 millivolt (mV) indicating mildly oxidizing conditions.

Sediment thicknesses were approximated with a 1-inch PVC or steel-pipe probe with an open bottom. The probe was pushed through the sediment by hand until greater resistance was encountered on what was perceived to be more granular soil. Sediment thicknesses were estimated at 4 to 6 feet, but it was noted that the organic sediment may be intermixed with the granular soil over an unknown thickness.

Surface Water Samples

On August 17, 2022, four surface water samples were collected from the central portion of Flintrock Pond (designated SW-401 through SW-404). The sum of the concentrations of the six MassDEP-regulated PFAS compounds (PFAS6)[4] was similar amongst the samples with detections ranging from 478 ng/L to 494 ng/L as summarized on **Table 4**.

Porewater Samples

The collection of porewater samples from Flintrock Pond was attempted using two methodologies. First, a push-point sampler was inserted into the sediment with the screen set approximately 1 to 2 feet below the top of the sediment. Tubing was inserted into the sampler to extract the porewater. However, sufficient volumes of porewater could not be collected. In an alternative approach, sediment sample cores (PW-1 through PW-3) were collected from the central and southern portions of Flintrock Pond using a PVC coring tube.[5] The laboratory centrifuged the samples in an attempt to recover enough porewater for analysis of PFAS; however, sufficient volume could not be extracted from the sediment.

[4]Perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), perfluorodecanoic acid (PFDA), perfluoroheptanoic acid (PFHpA), perfluorohexanesulfonic acid (PFHxS), and perfluorononanoic acid (PFNA).

[5] GZA was unable to locate PW-1 through PW-3 on any historic site plans.

The sediment samples were analyzed as a solid. The PFOS concentrations were lower than that in the surficial sediment samples and ranged from 19 to 37 µg/kg (**Table 3**).

3.2.2.2 Mary Dunn Pond

Bathymetry Survey

A bathymetry survey of Mary Dunn Pond was completed by Steel Associates Marine Consultants, LLC in January 2023. The survey figure was included in the Phase II Interim Status Report #2 (Appendix C) and the bathymetry lines are included on **Figure 4**. Mary Dunn Pond has a relatively uniform bottom with elevation differences generally varying by 0 to 1 feet. During the sediment and surface water sampling described below, the depth of the pond was about 4.5 to 5 feet. The Interim Phase II Status Report #2 stated that, "The maximum depth of Mary Dunn Pond is projected to be approximately 7 to 8 feet; it is assumed that it varies significantly seasonally. The groundwater withdrawals at [drinking water production wells] Mary Dunn #1 and #2 may also influence the depth of Mary Dunn Pond."

Sediment Samples

In June 2023, 16 sediment samples (MDP-101 through MDP-116) were collected from Mary Dunn Pond along one transect oriented generally from west to east as shown on **Figure 4**. Sediment samples were collected approximately every 50 feet. Sediment samples were collected with a petite ponar dredge or (at shallow locations) stainless-steel shovel and submitted for analysis of PFAS. PFOS concentrations ranged from non-detect to 20 µg/kg (**Table 5)**. The maximum PFOS concentrations at Mary Dunn Pond are over an order of magnitude lower than those observed at Flintrock Pond.

Surface Water Samples

In June 2023, three surface water samples were collected from the central portion of Mary Dunn Pond to the north (MDP-SW1), south (MDP-SW2), and along the central portion (MDP-SW3) of the sediment transect.[6] Samples MDP-SW1 and MDP-SW2 were collected from approximately 6 inches below the water surface. Sample MDP-SW3 was collected with a discrete water sampler from approximately 4 feet below the water surface. PFAS6 concentrations were similar amongst the samples with detections ranging from 29 ng/L (MDP-SW2) to 44 ng/L (MDP-SW3) (**Table 6**).

3.2.2.3 Unnamed Pond

In March 2023, sediment samples were collected from an unnamed pond (designated Unnamed Pond West from hereon) located immediately north of the MFTF (and west of Little Israel Pond) due to possible drainage patterns observed from the northeast corner of the MFTF and the adjacent South Flint Rock Road towards Unnamed Pond West. The pond was 2 feet deep on the day of sampling and had been observed to go dry during late summer months. Two samples (UP-101 and UP-103) were collected from the shoreline (un-submerged), and two samples (UP-102 and UP-104) were collected approximately 25 feet from the shoreline as shown on **Figure 3**. Samples were collected from 0 to 6 inches below the top of sediment with a stainless-steel hand trowel or shovel. PFOS concentrations ranged from 10 µg/kg (UP-104) to 27 µg/kg (UP-101) (**Table 7**). Slightly higher PFOS concentrations were detected in the samples collected from the un-submerged shoreline.

[6] GZA was unable to locate MDP-SW1 through MDP-SW3 on any historic plans.

3.2.3 Groundwater Screening and Monitoring Well Installations

A series of groundwater screening locations (via direct push methodologies) and monitoring well installations were completed at the Site to further delineate PFAS impacts to groundwater. These installations included:

- Groundwater screening locations (via direct-push methodologies) focused on unassessed areas south/southwest of the MFTF, in the vicinity of Mary Dunn Pond, and along Airport Way which borders the northern edge of the airport. Based on the results of the groundwater screening locations, permanent wells were installed in select areas.

- Shallow monitoring wells at the MFTF to assess PFAS impacts associated with select historic features and the current leaching field, as well as to assess PFAS impacts to the north and southeast of the facility.

- Deep monitoring wells at the MFTF to further refine deep groundwater quality and flow directions.

- Shallow and deep monitoring wells on the Barnstable Fire District property west of Flintrock Pond to assess impacts upgradient of the MFTF.

Each of these well installation events are briefly described below. At select locations, soil samples were collected for PFAS analysis from depths of 5 to 52 feet bgs. The soil sample results are also discussed briefly below.

3.2.3.1 Groundwater Screening and Subsequent Monitoring Well Installations

Three rounds of groundwater screening were conducted between October 2022 and April 2023. The locations were focused on previously unassessed areas south/southwest of the MFTF, in the vicinity of Mary Dunn Pond, and along Airport Way. A total of 27 points (GWS-1 through GWS-27) were completed using direct push drilling methodologies. Multi-level groundwater samples were collected at each location with the exception of GWS-5. A deeper groundwater sample could not be collected at GWS-5 due to the sample tooling becoming clogged with fine sand and silt. See **Figures 7** and **8** for the approximate locations of the screening points and **Table 1B** for a summary of the results. The results of the groundwater screening were used to select the installation locations of six additional well couplets (designated MW-401S/D, MW-402S/D, MW-403S/D, MW-404S/D, MW-407S/D, and MW-408S/D) and one deeper well (PC-39D) (**Figures 7** and **8**).

A brief description of the groundwater screening location results and subsequent well installations is provided below:

South/Southwest of the MFTF

Between August and October 2022, eleven groundwater screening points (GWS-1 through GWS-11) were completed south/southwest of the MFTF property. At each screening point location, groundwater samples were collected at approximately 5 feet and 20 feet below the groundwater table with the exception of GWS-5 (as described above). PFAS6 concentrations above the Method 1 GW-1 standard of 20 ng/L were only detected in the eastern most locations (GWS-4, GWS-5, GWS-7, GWS-8, and GWS-11.) PFAS6 concentrations were generally highest closest to the MFTF and decreased with increased distance south of the MFTF. The PFAS6 concentrations within the shallow and deep samples at each screening location were generally similar, except at GWS-4 (located closest to the MFTF) in which the shallow sample

result was over two orders of magnitude higher than the deeper sample result (1,678 ng/L vs 7.5 ng/L). Subsequent permanent well installations in this area included:

- MW-402S/D: Located adjacent to groundwater screening location GWS-7. GWS-7 was the most southwesterly groundwater screening location in which PFAS6 concentrations were still above the Method 1 GW-1 standard of 20 ng/L.
- PC-39D: Located adjacent to shallow well PC-39 (and west of GWS-11).

MW-402S/D and PC-39D were installed via hollow stem auger drilling methods in July 2023. During the borings for the deeper wells, soil samples were collected for strata identification. Samples were collected at approximately 5-foot intervals until the approximate expected depth of the clay layer was approached; continuous soil sampling was then initiated to confirm the elevation of clay layer. The clay layer was encountered at the deep borings at approximately 48 feet bgs (PC-39D) and 55 feet bgs (MW-402D). The shallow member of the MW-402S/D couplet was set with 10 feet of screen set across the water table. The deeper wells (MW-402D and PC-35D) were set with 5 feet of screen set just above the clay layer.

A soil sample was collected from each of the deep borings for PFAS analysis. The depths of the samples collected ranged from 18 to 20 feet bgs and 50 to 52 feet bgs. No PFAS compounds were detected above laboratory reporting limits in the samples.

Mary Dunn Pond Area / Airport Way

In January and April 2023, sixteen groundwater screening points (GWS-12 through GWS-27) were completed west of Mary Dunn Pond and along Airport Way. At each point, a shallow groundwater sample was generally collected from the approximate water table elevation and a deeper groundwater sample was generally collected approximately 10 to 15 feet below the shallow sample with a few exceptions. At location GWS-24, three groundwater samples were collected (at groundwater table, 10-15 feet below groundwater table, and 30-35 feet below groundwater table). At locations GWS-25 and GWS-26, which were completed during the second mobilization to better define the areas of PFAS impacts, no shallow sample was collected as information from the first mobilization indicated that impacts were primarily within the deeper groundwater. Two deeper groundwater samples were collected from these two locations at depths similar to the intermediate and deep samples for GWS-24 described above.

At the locations completed to the west/southwest of Mary Dunn Pond (GWS-12 through GWS-15, GWS-20, and GWS-22), PFAS6 was not detected in any of the shallow groundwater samples collected. The most elevated PFAS6 concentrations were detected in the deeper samples located to the southwest of the pond, GWS-14 at 937 ng/L, GWS-22 at 428.2 ng/L, and GWS-15 at 394 ng/L. PFAS6 concentrations significantly decreased to the north (25 ng/L at GWS-12) and south (5.7 ng/L at GWS-20) of the aforementioned points. Subsequent permanent well installations in this area included:

- MW-404S/D: Located between groundwater screening locations GWS-14 and GWS-15 (mentioned above);
- MW-408S/D: Located just south of groundwater screening location GWS-22 (mentioned above); and
- MW-401S/D: Located between the most northly groundwater screening locations, GWS-12 and GWS-13. PFAS6 was not detected within the shallow groundwater at GWS-12 and GWS-13, and was only detected in the deep groundwater sample from GWS-12 (25 ng/L).

At the locations completed to the east/southeast of Mary Dunn Pond (GWS-24 through GWS-27), the most elevated PFAS6 concentrations were detected in the deeper samples located to the southeast of the pond. The highest PFAS6

concentration was detected at GWS-25 (201 ng/L in the intermediate sample collected from 38 to 43 feet bgs). A slightly lower PFAS6 concentration, 153.6 ng/L, was detected in the deepest sample collected at this location (58 to 63 feet bgs). Subsequent permanent well installations in this area included:

- MW-407S/D: Located adjacent to the most northly screening location GWS-27. PFAS6 concentrations were below the Method 1 GW-1 standard at GWS-27 (13 ug/L in the shallow sample and 7.8 ng/L in the sample collected from 30-35 feet bgs).

At the locations completed along Airport Way (GWS-16 through GWS-19), PFAS6 concentrations were highest at location GWS-19 (656 ng/L in the shallow sample) with significantly lower concentrations to the west and east of this location. At the western-most locations (GWS-18, GWS-19, and GWS-20), PFAS6 concentrations were generally two to five times higher in the shallow samples than the deeper samples, while at the eastern most locations (GWS-16 and GWS-17) PFAS6 concentrations were generally similar in the shallow and deep samples. Subsequent permanent well installations in this area included:

- MW-403S/D: Located adjacent to groundwater screening location GWS-19.

These wells, with the exception of MW-408S/D, were installed via hollow stem auger drilling methods between October 2023 and February 2024. MW-408S/D was installed in February 2024 using direct push methodology via a GeoProbe rig. As described above for the previous well installations, during the borings for the deeper wells (with the exception of MW-408S/D), soil samples were collected for strata identification. The clay layer was encountered at the deep borings (with the exception of MW-408D) at approximately 46 to 54 feet bgs. The shallow member of each couplet was set with 10 feet of screen set across the water table. The deeper member of each couplet was set with 5 feet of screen set just above the clay layer. At MW-408D, only one soil sample was collected via direct push from approximately 45 to 50 feet bgs. The clay layer was not observed in the boring, but was assumed to be at about 50 feet bgs based on nearby well MW-404D. The well screen for MW-408D was set from 45 to 50 feet bgs.

3.2.3.2 MFTF Property

Shallow Monitoring Well Installations

Between August and October 2022, eight shallow monitoring wells (MW-301 through 306, MW-310, and MW-311) were installed at the MFTF property or on adjacent properties in close proximity to the MFTF property as shown on **Figure 2**. The rationale for the monitoring well locations is described below:

- MW-301: Assessment of groundwater in the vicinity of a subsurface structure reportedly used historically for discharge of treated groundwater
- MW-302 and MW-303: Assessment of groundwater in the vicinity of the current leaching field
- MW-304, MW-306, and MW-310: Assessment of groundwater to the northeast and north of the MFTF
- MW-311: Assessment of groundwater southeast of the MFTF
- MW-305: Replacement well for PFW-6 which was destroyed during the capping project

The wells were installed via direct push drilling methodologies to depths of approximately 15 feet bgs with 10-foot screens set across the water table. Soil samples for PFAS analysis were collected from approximately 0 to 2 feet bgs and from approximately 12 to 14 feet bgs (approximate water table) at MW-301 through MW-306 and MW-310. The analytical

results are summarized in **Table 2.** The highest PFOS concentration (33 µg/kg) was detected at MW-305 (0-2 feet bgs) which is located within the central portion of the MFTF facility. PFOS concentrations were generally higher in the shallower soil samples at each location.

Deep Monitoring Well Installations

In November 2023, two deep monitoring wells (designated MW-405 and MW-406) were installed in the vicinity of the MFTF to further refine deep groundwater quality and flow gradients. MW-405 was installed in the northwest portion of the MFTF and MW-406 was installed 75 feet southwest of the MFTF as shown on **Figure 2**. The wells were installed via direct push drilling methodologies with 5-foot screen sections set at 45 to 50 feet bgs (MW-405) and 40 to 45 feet bgs (MW-406). Continuous soil samples were collected at MW-405 to 50 feet bgs. Fine to coarse sands were encountered and no clay layer was observed. At MW-406, due to deteriorating weather conditions during the drilling, soil samples were only collected from the top 15 feet. At both locations, soil samples were collected for PFAS analysis at 5 feet bgs and approximately at the water table (12 to 13 feet bgs). PFAS were not detected above laboratory reporting limits in either of the soil samples collected from MW-405. At MW-406, the most elevated PFAS compound detected was PFOS at concentrations of 22.3 µg/kg in the 5-foot sample and 4.3 µg/kg in the 13-foot sample.

3.2.3.3 Barnstable Fire District (West of Flintrock Pond)

In September 2022, five monitoring wells (designated MW-307S/D, MW-308S/D, and MW-309) were installed west of Flintrock Pond to assess conditions upgradient of the MFTF (**Figure 2)**. The wells were installed using direct-push technologies. The shallow wells (MW-307S and MW-308D) were installed with 10 feet of screen set across the water table (10 to 20 feet bgs). The deeper wells (MW-307D, MW-308D, and MW-309) were set with five feet of screen set to 35 to 40 feet bgs. Fine to coarse sands with varying amounts of gravel and little silt were encountered at each boring. No silt or clay layers were identified in the soil borings.

3.2.4 Elevation Survey

In April 2023, Green Seal Environmental, LLC. surveyed the new monitoring wells installed on the Barnstable Fire District property (MW-307S/D, MW-308S/D, and MW-309), as well as several existing monitoring wells on this property as indicated on **Table 8**. The survey was conducted using a GPS-based Javad LS+ Receiver/Javad Triump-3 Base Station.

In November 2023, Green Seal Environmental, LLC. surveyed selected monitoring wells to "refine the accuracy of existing monitoring well elevations" as indicated on **Table 8**. The survey was conducted using level run surveys from existing control points where feasible and supplemented by a GPS-based Javad LS+ Receiver/Javad Triump-3 Base Station.

3.3 RECENT ASSESSMENTS

On May 8, 2024, GZA was contracted by the County to continue MCP assessment activities. Assessments completed to date are described below.

3.3.1 MassDEP Borings/Monitoring Well Installations

As part of a Site Inspection under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), MassDEP completed additional Site assessments just north of the MFTF in May 2024. MassDEP's April 2024 *Sample Collection & Analysis Quality Assurance Project Plan* stated that the assessments were being completed "in areas where the nature and extent of PFAS impacts have not yet been defined." MassDEP retained Verdantas LLC (Verdantas) to

complete the assessments. Note that a GZA representative was on-site to observe the field explorations activities associated with these assessments.

Between May 20 and 22, 2024, three shallow wells (designated VDT-01, VDT-03, and VDT-05) and two well couplets (VDT-02S/D and VDT-04S/D) were installed in the northwestern corner of the MFTF property (VDT-01) and along South Flint Rock Road as shown on **Figure 2**. The wells were installed via direct-push (i.e., GeoProbe) drilling methodologies with continuous samples collected using a 5-foot soil sampler fitted with acetate liners. The shallow wells were screened across the water table and set to final depths of 17 feet bgs (VDT-01 and VDT-02S) to 43 feet bgs (VDT-05) with depths to water increasing with increasing distance east of the MFTF. The two deep wells (VDT-02D and VDT-04D) were installed to approximately 50 feet bgs. The stratigraphy consisted primarily of fine to coarse sand with intermittent layers of more gravelly material. Less permeable layers (silt or clay) were not observed in the borings. The monitoring wells were constructed of 2-inch diameter PVC with 10-foot well screens, with the exception of VDT-03 which was set with a 15-foot well screen.

During the monitoring well installations, select soil samples were collected for laboratory analysis. Verdantas collected soil samples from VDT-02 at depths of 0 to 1 feet bgs and 45 to 46 feet bgs. GZA personnel collected supplemental soil samples from VDT-01 (0-9 inches bgs), VDT-02 (5-6 feet bgs), and VDT-05 (0-9 inches bgs and 9-12 feet bgs). With the exception of the soil sample collected at VDT-01, no PFAS compounds were detected above applicable Method 1 S-1/GW-1 standards. At VDT-01, PFOS was detected at a concentration of 4.53 µg/kg (above the Method 1 S-1/GW-1 standard of 2 µg/kg) and PFHxS was detected at a concentration of 0.34 µg/kg (slightly above the Method 1 standard of 0.30 µg/kg). The results are summarized in **Table 2** and the complete laboratory analytical reports are included in **Appendix E.**[7]

In accordance with 310 CMR 40.1403(10)(b), GZA notified the Town of Barnstable of the applicable analytical results within 30 days of receipt of the results from the analytical laboratory. A copy of the notification letter is included in **Appendix F**.

3.3.2 Permeable Reactive Barrier Pilot Test Well Installations

In July 2024, in preparation for a proposed colloidal activated carbon (CAC) permeable reactive barrier (PRB) pilot test at the MFTF property (described in GZA's July 2024 Draft IRA Plan Modification), GZA installed a series of multi-level monitoring wells intended to serve as upgradient, in-barrier, and downgradient monitoring points to assess the efficacy of the pilot test CAC injections. The area in the vicinity of monitoring well PFW-1 was selected for the PRB pilot test because it is hydraulically downgradient of the "hot spot" and exhibits the highest PFAS concentrations detected in groundwater at the site. The shallow overburden wells were installed via hollow-stem auger drilling methods and the deep and intermediate overburden wells were installed via drive-and-wash casing drilling methods. The well installations are described briefly below with additional details to be included in the next IRA Status Report.

One deep well (designated GZ-2D) was completed adjacent to existing shallow well PFW-1 to serve as an in-barrier well for the pilot test as shown on **Figure 2**. A monitoring well couplet (GZ-1S/D) was installed downgradient of the proposed pilot test area, and a monitoring well triplet (GZ-3S/I/D) was installed upgradient of the proposed pilot test area. Continuous sampling was completed at deep well GZ-1D in order to classify the subsurface hydrogeologic stratigraphy, including the depth of the lower permeability clay/silt layer. Continuous soil sampling was also completed at the two other deep wells when approaching the depth of the clay layer observed in GZ-1D of about 60 feet bgs. The clayey silt layer was encountered at approximately 66 to 67 feet bgs at GZ-1D and GZ-2D, and at about 80 feet bgs at GZ-3D. At GZ-3D, the clayey silt layer was observed to be only approximately 2 inches thick and underlain by fine to coarse sand. A

[7] The laboratory reports associated with the samples collected on behalf of MassDEP area not included in Appendix E. We anticipate that these will be uploaded separately by MassDEP.

fine sand and silt layer was also encountered at approximately 46 to 48 feet bgs and again just above the clayey silt layer. The deep wells were set with 10 feet of screen set just above the clayey silt layer. The intermediate well (GZ-3I) was set with 10 feet of screen set just above the fine sand and silt layer at 46 to 48 feet bgs, and the shallow wells were set with 10 feet of screen set to intercept the water table with final depths of approximately 20 to 25 feet bgs. The boring/monitoring well completion logs are included in **Appendix G**.

The remainder of the PRB pilot test is scheduled to be executed beginning in September 2024 in accordance with the IRA plan modification.

3.3.3 Groundwater Gauging and Sampling Round

GZA completed a comprehensive groundwater gauging round in June 2024. On June 6 and June 7, GZA gauged accessible monitoring wells shown on historic plans, as well as additional wells encountered (labeled as UN-1 through UN-6 on **Table 8** and **Figure 2**), for depth to groundwater using an electronic water level indicator[8]. On June 19, GZA visited the Barnstable Fire District Property with representatives from the Barnstable Fire District and gauged several additional wells, which were not on historic plans for this RTN and made available to GZA. The groundwater level measurements are provided in **Table 8**. Preliminary groundwater elevation contour and flow direction maps were prepared using the June measurements for shallow and intermediate/deep zones, as well as the available site reference elevation data[9], are presented as **Figures 5 and 6**.[10] As shown on **Figures 5** and **6**, in the vicinity of the MFTF, groundwater generally flows to the southeast in both the shallow and intermediate/deep zones.

From June 10 to June 14 and June 19 to June 20, 2024, GZA collected 114 groundwater samples for PFAS analysis using low flow purging techniques and dedicated HDPE sampling tubing. A peristaltic pump was used to sample all locations except PC-38, PC-11, PC-26, and VDT-05, where the depth to water was greater than the maximum suction head of the peristaltic pump. At these four locations, a stainless-steel submersible monsoon pump was utilized for sampling.[11] In the process of low-flow purging activities, groundwater from each well was monitored for pH, specific conductivity, temperature, oxidation-reduction potential, and dissolved oxygen using a YSI multimeter equipped with a flow-through cell. Turbidity samples were collected before the flow-through-cell. Upon general stabilization of these field-screening parameters, groundwater samples were collected.

GZA also collected field equipment blanks at the end of each sampling mobilization (June 14 and June 20). Equipment blanks were collected from the water level meter, peristaltic pump, and submersible pump. No PFAS compounds were detected above laboratory reporting limits within the equipment blanks with the exception of the submersible pump blank during the first mobilization (June 14). Two PFAS compounds, 6:2 fluorotelomersulfonic acid (6:2 FTS; 13.7 ng/L) and PFOS

[8] Note that prior to performing this monitoring round, GZA toured the Site with representatives of BETA to locate and review the access and status of the available monitoring wells at the site.

[9] The Currently available surveyed reference elevation data for the numerous monitoring wells at the site was developed by multiple parties as part of numerous environmental investigation studies, using differing methods, over many years as summarized in Sections 2.2 and 2.3. Based on GZA's initial review of the available data, the overall quality and comprehensive integrity of the dataset may not meet the level of quality desired for the current effort. For that reason, a site-wide confirmatory re-survey effort is planned and the project reference elevations may be adjusted in the future to reflect the new data.

[10] Wells were categorized as shallow if the well screen generally intercepted the water table. Note, the water table fluctuates by several feet seasonally, as well as due to impacts of nearby pumping wells. Wells were categorized as deep if the screen was set greater than 55 feet bgs or generally within 5 feet of the clay surface. Remaining wells, screened between the water table and the clay surface, were categorized as intermediate.

[11] Based on the USEPA, Region 4, Laboratory Services & Applied Science Division's *Groundwater Sampling Operating Procedure*, dated April 22, 2023, stainless- steel submersible electric pumps are one of the recommended PFAS sampling devices when the water table is deeper than the range of a peristaltic pump.

(1.91 ng/L), were detected in this blank sample. The data for the three wells sampled via the submersible pump during the first mobilization still appears to be usable. In these samples, 6:2 FTS concentrations were either non-detect (PC-26 and PC-38) or over two orders of magnitude greater than that detected in the blank (PC-11 at 1630 ng/L). PFOS concentrations in the three samples were 20 to over 2,000 times greater that detected in the blank.

On June 20, GZA personnel collected surface water samples from four ponds within the vicinity of the Site: Flintrock Pond (designated FR-SW), Mary Dunn Pond (designated MDP-SW), Unnamed Pond East (designated UNPE-SW), and Upper Gate Pond (designated UGP-SW). The approximate sample locations are shown on **Figure 7**. The surface water samples were collected by immersing the sample bottle one to two inches beneath the water surface at an approximately 45-degree angle with the mouth of the bottle facing away from the shore and in a manner that mitigated the potential for sediment disturbance that could result in cross-contamination of the samples.

The groundwater and surface water samples were stored in an ice-packed cooler and transported to Pace Analytical under chain-of-custody protocols for analysis of PFAS via Modified EPA Method 1633 Draft. A select group of monitoring wells was also sampled for petroleum constituents in support of RTN 4-190 and the design of the permeable reactive barrier pilot test. These results will be included in the upcoming status report for RTN 4-190 and the IRA Status Report for this RTN, respectively. PFAS groundwater analytical results are summarized in **Table 1A** and surface water analytical results are summarized in **Table 4** (Flintrock Pond), **Table 6** (Mary Dunn Pond), and **Table 9** (Unnamed Pond East and Upper Gate Pond). Laboratory analytical reports are included in **Appendix H. Table 1A** also includes the analytical results from Verdantas' groundwater sampling round on May 31, 2024, which included monitoring wells VDT-01, VDT-02S/D, and VDT-04S/D.

Total PFAS6 concentrations in the monitoring wells located in the shallow and intermediate/deep groundwater zones during this June 2024 sampling round are illustrated on **Figures 7 and 8,** respectively. The results of the surface water samples are also included on the shallow groundwater plan (**Figure 7**). As shown, the currently available data indicated that the PFAS6 plume in the shallow groundwater generally extends from the Site to at least the Mary Dunn Pond (21.8 ng/L) to the southeast, generally consistent with the general groundwater flow directions. In the wells located to the east of Mary Dunn Pond, GZ-407S/D, PFAS6 groundwater concentrations were well below the Method 1 GW-1 standard (20 ng/L) with 1.71 ng/L at GZ-407S and no detections at GZ-407D. Impacts to shallow groundwater west of the Site appear to be limited primarily to Flintrock Pond (PFAS6 of 298 ng/L). Shallow wells near the west of the pond had relatively low concentrations of PFAS6 ranging from 0.42 ng/L (MW-308S) to 3.10 ng/L (WS-101). A limited area near the north of the MFTF does appear to be impacted. Newly installed wells VDT-02S and VDT-03 had PFAS6 impacts of 94.6 ng/L and 88.5 ng/L, respectively. Mounding associated with the re-injection of the treated groundwater from the Site extraction system may be impacting groundwater within the northern area of the MFTF property. The southern edge of the shallow groundwater plume is not yet fully defined. The shallow wells located south of the MFTF (MW-402S; non-detect) and south of extraction well PRW-4 (PC-38; 5.54 ng/L) had PFAS6 concentrations below Method 1 GW-1 standards indicating this may be the southern edge of the plume and/or the limit of the effectiveness of the groundwater extraction/containment system. However, wells located further south along Airport Way, MW-403S (53.1 ng/L) and MW-1-Airportway (81.2 ng/L), showed elevated PFAS6 concentrations. Additionally, PFAS6 concentrations are elevated in shallow groundwater south of Mary Dunn Pond (MW-404S at 79.6 ng/L and HW-2S at 92.4 ng/L). Of note, the shallow well located between Airport Way and Mary Dunn Road (MW-401S at 6.81 ng/L) had PFAS6 concentrations below Method 1 standards. GZA is currently assessing the PFAS signatures of the shallow groundwater to assess the behavior of the plume relative to expected migration pathways, individual constituent transformations and expected constituent retardations in the environment. The analyses will be used to try to better understand the extent and potential dynamic interactions of the PFAS plumes originating from the MFTF and other nearby sources (such as the Airport, the Town WWTP, and/or another yet unidentified source). The impacts south of Mary Dunn Pond appear to suggest that the direction of

the plume migration shifts from southeast to south as it is influenced by groundwater pumping from the Air-1 water supply well.[12]

The PFAS6 plume in the intermediate/deep groundwater flow regime has generally the same eastern and northern extents as the shallow plume. The plume generally extends from the MFTF property southeast to Mary Dunn Pond; as noted above, the shallow and deep well couplet located to the east of Mary Dunn Pond, GZ-407S/D, had PFAS6 groundwater concentrations well below the Method 1 GW-1 standard (20 ng/L). A limited area of deeper groundwater to the north of the MFTF appears to be impacted, similar to the shallow groundwater. Newly installed well VDT-02D, to the northeast of the MFTF, had a PFAS6 concentration of 169 ng/L. Notably, PFAS6 concentrations further east along South Flint Rock Road dropped to 11.8 ng/L at VDT-04D.

The western extent of the intermediate/deep plume is undefined by the currently available data. Unlike the shallow groundwater, intermediate and deep wells to the west of Flintrock Pond had PFAS6 concentrations exceeding 20 ng/L (MW-309 at 23.3 ng/L and TW6-08 at 33.5 ng/L), as did the deep wells adjacent to BFD-5 (TW5-08 at 29.5 ng/L and TW4-08 at 27.4 ng/L). PFAS6 impacts over 20 ng/L extend northwest past BFD-5 and to the west of BFD-2, with 22.4 ng/L detected at TW7-08. Similar to the groundwater southeast of the MFTF, GZA is currently assessing the PFAS relative constituents within the intermediate/deep groundwater in this area to assess the likely source of the impacts.

Similar to the shallow plume, the southern edge of the intermediate/deep groundwater plume is not yet well defined by the current monitoring points. While several of the intermediate/deep wells just south of the facility (MW-402D; 4.00 ng/L) and near MD-1 (PC-29; 6.56 ng/L) had PFAS6 concentrations below Method 1 GW-1 standards indicating this may be the southern edge of the plume, elevated PFAS6 concentrations were detected in the deep groundwater along Airport Way (MW-403D; 64.7 ng/L). Additionally, unlike within the shallow plume, the deeper wells immediately to the west of Mary Dunn Pond, MW-401D, MW-404D, and MW-408D, all had elevated detections of PFAS6 (48.6 to 189 ng/L). As with the shallow plume, the impacts near Mary Dunn Pond appear to suggest that the direction of the plume migration shifts from southeast to south potentially attributable to groundwater extraction from the airport well (Air-1) and/or other hydraulically downgradient wells; however, both the western and southern edges of the deeper plume in this area of the Site are not yet well defined.

In accordance with 310 CMR 40.1403(10)(b), GZA notified the Town of Barnstable, the Barnstable Fire District, Commonwealth Electric, and the Commonwealth of Massachusetts/Division of Fish and Wildlife of the applicable analytical results within 30 days of receipt of the results from the analytical laboratory. Copies of the notification letters are included in **Appendix F**.

3.4 UPCOMING ACTIVITIES

GZA has reviewed the data developed for the Site by the prior consultants, and based on this currently available data, GZA has developed a series of additional assessments to help fill data gaps and further refine the nature and extent of PFAS impacts at the Site and ultimately aid in developing a comprehensive conceptual site model (CSM). These assessments include:

- Confirmatory reference point elevation survey: A local surveyor will be retained to complete a level survey of the reference elevations of the accessible monitoring wells, and other monitoring points throughout the Site. As the

[12] Based on pumping data from 2021 through 2023 supplied to GZA by the Town of Barnstable, Air-1 is operated seasonally, generally between March/April through October.

prior consultant, BETA, noted, the elevations of many of the wells are uncertain. Accurate elevations are necessary to understand the groundwater flow directions at the Site, which are being influenced by multiple municipal water supply wells and the Site extraction well (PRW-4), as well as to understand vertical gradients which may be controlling the vertical migration of the PFAS plume.

- Hydraulic conductivity (K) testing: On August 20-22, 2024, GZA performed rising/falling head hydraulic conductivity tests at select shallow and intermediate/deep overburden monitoring wells to quantify the local K of the subsurface aquifer materials and assess the variability of K at the site. Once complete, the analyzed data and results, will be presented in the next status report. These data will improve our understanding of hydrogeological conditions at the Site and will serve as critical input parameters for the numerical groundwater flow model discussed further below.

- Surficial soil sampling: Additional surficial soil sampling, particularly to the north of the MFTF property will be performed to better assess the nature and extent of soil impacts. As shown on **Figure 3**, PFOS concentrations in soil generally decrease to below Method 1 S-1/GW-1 standards to the east and south of the MFTF. However, impacts to the north of the MFTF have not yet been well defined with elevated PFOS concentrations detected in the northwestern corner of the property (VDT-01), as well as within the sediment at Unnamed Pond West north of the MFTF.

- Monitoring well installations: Additional multi-level monitoring wells installations are required north and southeast of the MFTF property to better define the extent of the PFAS plume in these directions. The installations will focus on the areas north of the MFTF near MW-306/405, VDT-02S/D, and VDT-03, and the area to the southwest of the facility generally between PRW-4 and Airport Way. Additional multi-level monitoring wells may also be installed on the Barnstable Fire District property or other nearby properties to better assess the nature and extent of impacts from the MFTF property and/or provide additional data inputs to the numerical groundwater flow model.

- Instrumentation of Ponds: Piezometers will be installed in certain nearby surface water bodies including Flintrock Pond, Mary Dunn Pond, Upper Gate Pond, Unnamed Pond West, Unnamed Pond East, and Little Israel Pond. The data from these instruments will be used to assess the interaction between surface water and groundwater at the Site as well as groundwater flow gradients.

- Ecological Assessments: Based on GZA's review of the available data from Flintrock Pond and Mary Dunn Pond (surface water and sediment data), as well as the surficial soil data from the wooded areas surrounding the MFTF, the detected concentrations of PFAS (PFOS in particular) exceed published ecological screening levels (ESLs [13]) for soil, sediment, and surface water. These exceedances indicate that these PFAS concentrations present potentially significant exposures to ecological receptors, therefore a Site-specific Stage II Ecological Risk Characterization is warranted in accordance with 310 CMR 40.0995(2).

[13] The practice of ecological risk assessment for PFAS compounds in its infancy; currently there are only three sets of published ESLs, which cover only about 23 of the more than 6,000 Chemical Abstract Services (CAS) registered PFAS. ESLs developed by Divine et al., (2020) for the US Department of Defense Strategic Environmental Research and Development Program are, in GZA's opinion, the most comprehensive and well document PFAS ESLs.

The ESLs that are exceeded by Site data are intended to protect wildlife species that feed in upland, wetland, and aquatic habitats. These ESLs are developed using food web models. Food web models incorporate bioaccumulation factors (BAFs) from the literature to estimate contaminant concentrations in the prey species of the wildlife receptors. The degree of bioaccumulation can vary widely based on site-specific conditions. For that reason, collecting samples of prey organisms from the Site and having them analyzed for PFAS is likely to provide a much better understanding of potential risks to wildlife at the Site. GZA plans to collect fish, benthic invertebrate, and flying insect samples from Flintrock Pond and Mary Dunn Pond, and submit the tissues for PFAS analysis. These data will be used for Site-specific food web assessments.

Based on the data currently available, the extent of PFAS concentrations above benchmarks in wooded areas adjacent to the MFTF may be relatively small. Whether the collection of biological tissue samples is warranted for upland habitat areas (e.g., earthworms, other soil invertebrates, plant tissues) will be reassessed after the additional soil sampling program (described above) is completed.

In addition to reviewing the data developed for the Site, GZA has also compiled data from various nearby project stakeholders, including data for the surrounding municipal water supply wells (well construction details, pumping rates, and PFAS analytical data), as well as PFAS analytical data for the airport whose Phase II CSA indicated the presence of the MFTF PFAS plume at the airport. This data will be integrated within our overall site analyses, including:

- Development of a numerical groundwater model: As suggested in the original Phase II scope of work, a three-dimensional groundwater flow model to further our overall understanding of groundwater flow directions as well as contaminant fate and transport at the MFTF and surrounding properties. Groundwater withdrawal from the Site extraction well, as well as the surrounding municipal water supply wells, is resulting in significantly altered and complex groundwater flow gradients in both the horizontal and vertical directions. Once calibrated, the model will aid in our understanding these complex contaminant migration pathways both at the MFTF and the surrounding properties.

- Analysis of PFAS signatures and Site-specific PFAS fate and transport: GZA will continue to review and analyze the analytical data collected from the Site and surrounding properties to develop an understanding of the distribution and constituent composition of the PFAS plume(s) present in the Site area. A variety of graphical, statistical, and other mathematical analyses will be utilized with the goal of understanding the effects of constituent- and Site-specific fate and transport, identifying plumes from potentially different sources, and looking for abnormalities that would indicate the comingling of plumes.

4.0 PUBLIC NOTIFICATION

Notification of the availability of this Phase II Interim Status Report was provided to local officials in the Town of Barnstable. The notification is included in **Appendix I.**

Tables

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location Sample ID Sample Date	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	MW-1-AIRPORTWAY	FS1-A				FS1-B	FS1-C	HS-1/HS-1A/HSW-1									
			MW-1-AIRPORT-WAY 6/12/2024	FS-01A 6/16/2016	FS-01 4/11/2017	FS-01A 5/19/2021	FS-01A 6/10/2024	FS-01B 6/10/2024	FS-01C 6/10/2024	HSW-1/HS-1(a) 1/21/2016	HS-01 8/11/2016	HSW-1/HS-1(a) 12/8/2016	HS-01A 4/10/2017	HS-01A 11/17/2017	HS-01A 2/9/2018	HSW-1/HS-1(a) 1/9/2019	HSW-1/HS-1(a) 4/23/2019	HSW-1/HS-1(a) 10/28/2019	HSW-1/HS-1(a) 2/18/2020
Analyte (ng/L)																			
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**7.67**	**180**	**220**	< 6.7	**440**	**71.3**	< 1.43 U	**940**	**330**	**1300**	**340**	**760**	**170**	**510**	**67.0**	**43.0**	**32.0**
Perfluorooctanoic acid (PFOA)	NS	40000000	**11.6**	**550**	**730**	< 5	**1370**	**72.1**	< 1.43 U	**1700**	**460**	**1800**	**1000**	**1300**	**320**	**840**	**100.0**	**46.0**	**36.0**
Perfluorononanoic acid (PFNA)	NS	40000000	**0.504 J**	**120**	**73.0**	< 5.1	**99.2**	**129**	< 1.43	**770**	**390**	**350**	**280**	**110**	**150**	**43.0**	**65.0**	**33.0**	**22.0**
Perfluorodecanoic acid (PFDA)	NS	40000000	< 1.60	**60.0**	**40.0**	< 3.9	**35.0**	**6.08**	< 1.43	**540**	< 800	< 800	**130**	**73.0**	**54.0**	**10.00**	**55.0**	**13.0**	**9.10**
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**25.2**	**1400**	**1700**	< 4.4	**3330**	**131**	**0.758 J**	**7400**	**2200**	**7700**	**3800**	**5100**	**860**	**1700**	**300**	**150**	**66.0**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**36.2**	**1700**	**1700**	**12.0**	**2480**	**677**	**2.21**	**110000**	**56000**	**36000**	**38000**	**25000**	**13000**	**1800**	**2000**	**1800**	**740**
PFAS SUM	20	NS	**81.2**	**4010**	**4463**	**12.0**	**7754**	**1086**	**2.97**	**121350**	**59380**	**47150**	**43550**	**32343**	**14554**	**4903**	**2587**	**2085**	**905**
Perfluorobutanoic Acid (PFBA)	NS	NS	**7.41**	**110**	**110**	< 3.9	**201**	**40.2**	**1.43 J**	**820**	**270**	**1000**	**240**	**620**	**130**	**370**	**39.0**	**56.0**	**36.0**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**19.8**	**240**	**210**	< 6.7	**705**	**93.6**	< 2.86	**1700**	**410**	**3000**	**840**	**2300**	**450**	**1400**	**120**	**130**	**110**
Perfluorohexanoic acid (PFHxA)	NS	NS	**14.9**	**230**	**220**	< 5.3	**849**	**86.2**	< 1.43	**3300**	**840**	**5200**	**1000**	**3500**	**560**	**2300**	**170**	**160**	**120**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 1.60	**120**	**72.0**	< 6.2	**160**	**12.3**	< 1.43	**1400**	**1200**	**410**	**760**	**310**	**350**	**140**	**470**	**170**	**120**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 1.60	< 20	< 20	< 8	**0.894 J**	< 1.42	< 1.43	< 800	< 800	< 800	**41.0**	< 200	< 100	< 5	**24.0**	**18.0**	< 6.8
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 1.60	< 20	**7.40**	< 6.4	**1.82**	< 1.42	< 1.43	< 800	< 800	< 800	**61.0**	< 200	< 100	< 3.8	**12.0**	**59.0**	**13.0**
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 1.60	< 20	< 20	< 6.8	< 1.45	< 1.42	< 1.43	< 800	< 800	< 800	< 200	< 200	< 100	< 2.7	< 6.7	< 6.7	< 6.7
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**1.46 J**	**17.0**	**24.0**	< 5.6	**85.4**	**7.74**	**0.558 J**	**780**	**340**	**570**	**160**	**310**	**95.0**	**140**	**17.0**	**7.90**	< 5.1
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	**1.48 J**	---	---	---	**150**	**13.9**	< 1.43	---	---	---	---	---	---	---	---	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**1.83**	**46.0**	**34.0**	< 6.5	**50.6**	**9.92**	< 1.43	**900**	**380**	**530**	**240**	**100.0**	**74.0**	---	**18.0**	**5.60**	< 3.3
Perfluorononanesulfonic Acid (PFNS)	NS	NS	< 1.60	---	---	---	< 1.45	< 1.42	< 1.43	---	---	---	---	---	---	---	---	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 1.60	**8.80**	< 20	< 6.4	**2.58**	< 1.42	< 1.43	< 800	< 800	< 800	< 200	**66.0**	< 100	< 6	**16.0**	< 7.2	< 7.2
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 1.60	**240**	**240**	< 3.6	**105**	**2.62**	< 1.43	< 800	< 800	< 800	**45.0**	< 200	< 100	< 3.4	**15.0**	**17.0**	**7.50**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 16.0	< 20	< 20	< 7	< 14.5	< 14.2	< 14.3	< 800	< 800	< 800	< 200	< 200	< 100	< 12	< 6.6	< 6.6	< 6.6
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 16.0	< 20	< 20	< 7.1	< 14.5	< 14.2	< 14.3	< 800	< 800	< 800	< 200	< 200	< 100	< 7.9	< 9.4	< 9.4	< 9.4
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	< 1.60	---	---	---	< 1.45	**1.01 JF**	< 1.43	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	< 1.60	---	---	---	< 1.45	< 1.42	< 1.43	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 1.60	< 20	< 20	< 7	< 1.45	< 1.42	< 1.43	< 800	< 800	< 800	< 200	< 200	< 100	< 10	< 9	< 9	< 9
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 1.60	< 20	< 20	< 7.8	< 1.45	< 1.42	< 1.43	< 800	< 800	< 800	< 200	< 200	< 100	< 13	< 3.5	< 3.5	< 3.5
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	< 6.40	---	---	---	< 5.81	< 5.69	< 5.72	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**21.9**	**88.0**	**43.0**	**16.0**	**25.6**	**20.4**	< 5.72	**8800**	**700**	**14000**	**3800**	**4100**	**930**	**2600**	**350**	**270**	**130**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 6.40	**13.0**	**8.60**	< 6.7	**21.1**	**4.29 J**	< 5.72	**4200**	**2500**	**1300**	**3100**	**1300**	**840**	---	**670**	**160**	**180**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	< 3.20	---	---	---	< 2.90	< 2.84	< 2.86	---	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	< 3.20	---	---	---	< 2.90	< 2.84	< 2.86	---	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	< 3.20	---	---	---	< 2.90	< 2.84	< 2.86	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	< 3.20	---	---	---	< 2.90	< 2.84	< 2.86	---	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	< 6.40	---	---	---	< 5.81	< 5.69	< 5.72	---	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	< 6.40	---	---	---	< 5.81	< 5.69	< 5.72	---	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	< 6.40	---	---	---	< 5.81	< 5.69	< 5.72	---	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	< 6.40	---	---	---	< 5.81	< 5.69	< 5.72	---	---	---	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1	MCP Method 1	HS-1/HS-1A/HSW-1		HS-6/HS-2A/HSW-6															
Sample ID	GW-1	GW-3	HSW-1/HS-1(a)	HSW-1/HS-1(a)	HSW-6/HS-2(a)	HSW-6/HS-2(a)	HS-06	HS-02A	HS-02A	HS-02A	HS-02A	HSW-6/HS-2(a)	HSW-6/HS-2(a)	HSW-6/HS-2(a)	HSW-6/HS-2(a)	HSW-6/HS-2(a)	HSW-6/HS-2(a)	HSW-6/HS-2(a)	HSW-6/HS-2(a)	HSW-6/HS-2(a)
Sample Date	Standards	Standards	5/11/2020	11/2/2021	1/21/2016	3/30/2016	8/11/2016	4/10/2017	11/17/2017	2/9/2018	6/26/2018	1/9/2019	7/22/2019	10/28/2019	7/28/2020	10/20/2020	1/26/2021	5/19/2021	7/28/2021	11/2/2021
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**63.0**	**430**	**620**	**400**	**420**	**230**	**180**	**84.0**	**15.0**	**66.0**	**52.0**	**100.0**	**69.0**	**56.0**	**640**	**150**	**49.0**	**870**
Perfluorooctanoic acid (PFOA)	NS	40000000	**100.0**	**470**	**940**	**2800**	**450**	**660**	**320**	**160**	**15.0**	**94.0**	**64.0**	**79.0**	**80.0**	**48.0**	**320**	**180**	**45.0**	**550**
Perfluorononanoic acid (PFNA)	NS	40000000	**57.0**	**46.0**	**540**	**750**	< 800	**320**	**110**	**120**	< 8.7	**26.0**	**43.0**	**46.0**	**40.0**	**64.0**	**35.0**	**47.0**	**57.0**	**65.0**
Perfluorodecanoic acid (PFDA)	NS	40000000	**37.0**	**12.0**	< 800	**450**	< 800	**110**	**89.0**	**100.0**	**10.00**	**7.40**	**19.0**	**30.0**	**18.0**	**48.0**	**21.0**	**19.0**	**13.0**	**12.0**
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**300**	**1600**	**3700**	**17000**	**2300**	**2700**	**1000**	**470**	**26.0**	**140**	**170**	**310**	**350**	**120**	**1400**	**440**	**100.0**	**2500**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**1300**	**1800**	**77000**	**320000**	**41000**	**28000**	**45000**	**25000**	**950**	**1300**	**1100**	**3600**	**2300**	**5700**	**2800**	**2700**	**1500**	**1900**
PFAS SUM	20	NS	**1857**	**4358**	**82800**	**341400**	**44170**	**32020**	**46699**	**25934**	**1016**	**1633**	**1448**	**4165**	**2857**	**6036**	**5216**	**3536**	**1764**	**5897**
Perfluorobutanoic Acid (PFBA)	NS	NS	**29.0**	**310**	**420**	**300**	**430**	**150**	**130**	**67.0**	**47.0**	**110**	**26.0**	**61.0**	**20.0**	**34.0**	**430**	**130**	**29.0**	**490**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**100.0**	**1700**	**860**	**760**	**730**	**490**	**490**	**150**	**82.0**	**350**	**79.0**	**240**	**130**	**95.0**	**2100**	**480**	**100.0**	**2600**
Perfluorohexanoic acid (PFHxA)	NS	NS	**150**	**2000**	**1500**	**1700**	**1400**	**780**	**880**	**200**	**76.0**	**540**	**140**	**330**	**230**	**120**	**2600**	**600**	**120**	**3400**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**57.0**	**110**	**1100**	**5600**	**490**	**570**	**650**	**780**	**290**	**190**	**190**	**350**	**150**	**280**	**88.0**	**140**	**120**	**70.0**
Perfluorododecanoic acid (PFDoDA)	NS	NS	**3.60**	< 8	< 800	< 800	< 800	< 200	< 200	< 100	**62.0**	**39.0**	**29.0**	**13.0**	< 6.8	< 16	< 5.9	< 8	< 8	< 8
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	**5.90**	**8.10**	**440**	< 800	< 800	**46.0**	< 200	< 100	**8.70**	**5.70**	**16.0**	**12.0**	< 6.9	< 13	< 4.8	< 6.4	< 6.4	**10.00**
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 1.6	< 6.8	< 800	< 800	< 800	< 200	< 200	< 100	< 2.7	< 2.7	< 6.7	< 6.7	< 6.7	< 14	< 3.7	< 6.8	< 6.8	< 6.8
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**17.0**	**120**	< 800	**290**	**320**	**91.0**	< 200	**40.0**	**9.30**	**13.0**	**8.30**	**36.0**	**24.0**	**15.0**	**280**	**32.0**	**11.0**	**220**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	**23.0**	---	---	---	---	---	---	---	---	---	---	---	---	---	**400**	---	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**12.0**	**9.90**	**550**	**5400**	< 800	**740**	**120**	**110**	---	---	**6.30**	**7.80**	**7.80**	< 13	**10.00**	**11.0**	**12.0**	**7.70**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	**7.90**	---	---	---	---	---	---	---	---	---	---	---	---	---	**12.0**	---	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 3.6	< 6.4	< 800	**530**	< 800	< 200	**100.0**	**72.0**	**63.0**	< 6	**17.0**	< 7.2	< 7.2	< 13	< 5.3	< 6.4	< 6.4	< 6.4
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 3.1	< 3.6	< 800	< 800	< 800	< 200	< 200	**56.0**	**88.0**	**33.0**	**30.0**	**12.0**	< 6.6	**11.0**	< 8.1	< 3.6	< 3.6	< 3.6
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	---	< 7	< 800	< 800	< 800	< 200	< 200	< 100	< 12	< 12	< 6.6	< 6.6	< 6.6	< 14	---	< 7	< 7	< 7
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	---	< 7.1	< 800	< 800	< 800	< 200	< 200	< 100	< 7.9	< 7.9	< 9.4	< 9.4	< 9.4	< 14	---	< 7.1	< 7.1	< 7.1
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	---	< 7	< 800	< 800	< 800	< 200	< 200	< 100	< 10	< 10	< 9	< 9	< 9	< 14	---	< 7	---	< 7
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	---	< 7.8	< 800	< 800	< 800	< 200	< 200	< 100	< 13	< 13	< 3.5	< 3.5	< 3.5	< 16	---	< 7.8	---	< 7.8
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**270**	**4900**	**2900**	**12000**	**1700**	**4100**	**2500**	**410**	**44.0**	**410**	**170**	**270**	**250**	**78.0**	**2500**	**660**	**94.0**	**6300**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**360**	**120**	**3700**	**12000**	**2500**	**1800**	**1800**	**1700**	---	---	**140**	**320**	**170**	**490**	**240**	**280**	**110**	**140**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
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5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	HS-6/HS-2A/HSW-6			HW-1D									HW-1S			HW-2D		
Sample ID			HSW-6/HS-2(a)	HSW-6/HS-2(a)	HSW-6/HS-2(a)	HW-001D	HW-001D	HW-001D	HW-001D	HW-001D	HW-001D	HW-001D	HW-001D	HW-001D	HW-001S	HW-001S	HW-001S	HW-002D	HW-002D	HW-002D
Sample Date			1/25/2022	11/9/2022	11/2/2023	7/6/2016	5/3/2017	1/10/2019	10/28/2019	10/21/2020	11/3/2021	11/11/2022	11/2/2023	6/14/2024	7/6/2016	11/1/2023	6/14/2024	7/6/2016	11/21/2023	6/14/2024
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**160**	**200**	**190**	**5.50**	**6.70**	< 7.4	< 7.1	< 6.7	< 6.7	< 1.9	< 1.8	**0.580 J**	< 20	< 1.8	**1.30 J**	< 20	**11.0**	**5.28**
Perfluorooctanoic acid (PFOA)	NS	40000000	**170**	**160**	**160**	**9.80**	**8.00**	< 3.3	< 7.4	< 5	< 5	< 1.9	< 1.8	**0.956 J**	< 20	< 1.8	**1.55**	< 20	**23.0**	**9.31**
Perfluorononanoic acid (PFNA)	NS	40000000	**46.0**	**150**	**170**	**4.70**	**7.90**	< 8.7	< 4.9	< 5.1	< 5.1	< 1.9	< 1.8	**0.696 J**	< 20	< 1.8	< 1.50	< 20	**3.20**	**1.96**
Perfluorodecanoic acid (PFDA)	NS	40000000	**6.70**	**19.0**	**34.0**	< 20	< 20	< 6.1	< 4.1	< 3.9	< 3.9	< 1.9	< 1.8	< 1.45	< 20	< 1.8	< 1.50	< 20	< 2.1	< 1.47
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**410**	**350**	**430**	**16.0**	< 20	< 5.6	< 5.2	< 4.4	< 4.4	**37.0**	**13.0**	**3.93**	**5.30**	< 1.8	**1.93**	**12.0**	**61.0**	**15.8**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**1600**	**1700**	**3200**	**41.0**	**25.0**	< 6	< 5.2	< 5.7	< 5.7	**17.0**	**16.0**	**5.90**	**7.00**	< 1.8	**2.67**	**9.50**	**170**	**49.9**
PFAS SUM	20	NS	**2393**	**2579**	**4184**	**77.0**	**47.6**	**ND**	**ND**	**ND**	**ND**	**54.0**	**29.0**	**12.1**	**12.3**	**ND**	**7.45**	**21.5**	**268**	**82.3**
Perfluorobutanoic Acid (PFBA)	NS	NS	**160**	**180**	**120**	**9.80**	< 20	< 5.5	< 7	< 3.9	< 3.9	< 1.9	< 1.8	< 5.80	< 20	< 1.8	**1.42 J**	< 20	**8.80**	**7.79**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**690**	**830**	**500**	**15.0**	**7.30**	< 7.5	< 4.1	< 6.7	< 6.7	**2.10**	< 1.8	< 2.90	**6.70**	< 1.8	**2.48 J**	< 20	**26.0**	**19.2**
Perfluorohexanoic acid (PFHxA)	NS	NS	**580**	**1000**	**480**	**12.0**	**8.50**	< 3.5	< 6.4	< 5.3	< 5.3	< 1.9	< 1.8	**0.572 J**	**5.40**	< 1.8	**2.22**	**4.80**	**23.0**	**13.3**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**51.0**	**44.0**	**120**	< 20	< 20	< 2.5	< 4.3	< 6.2	< 6.2	< 1.9	< 1.8	< 1.45	< 20	< 1.8	< 1.50	< 20	< 2.1	< 1.47
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 8	**2.40**	**3.00**	< 20	< 20	< 5	< 6.8	< 8	< 8	< 1.9	< 1.8	< 1.45	< 20	< 1.8	< 1.50	< 20	< 2.1	< 1.47
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 6.4	**47.0**	**6.80**	**6.30**	< 20	< 3.8	< 6.9	< 6.4	< 6.4	< 1.9	< 1.8	< 1.45	< 20	< 1.8	< 1.50	< 20	< 2.1	< 1.47
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 6.8	**4.10**	< 1.9	**6.70**	< 20	< 2.7	< 6.7	< 6.8	< 6.8	< 1.9	< 1.8	< 1.45	**5.90**	< 1.8	< 1.50	**5.50**	< 2.1	< 1.47
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**46.0**	**98.0**	**45.0**	**8.80**	< 20	< 5.4	< 5.1	< 5.6	< 5.6	**2.10**	< 1.8	< 1.45	**7.60**	< 1.8	< 1.50	**8.30**	< 2.1	**1.35 J**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	**110**	**80.0**	---	---	---	---	---	---	**2.70**	< 1.8	**0.355 J**	---	< 1.8	**0.413 J**	---	**2.50**	**1.43 J**
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**9.10**	**53.0**	**56.0**	< 20	< 20	---	< 3.3	< 6.5	< 6.5	< 1.9	< 1.8	< 1.45	< 20	< 1.8	< 1.50	< 20	**2.90**	< 1.47
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	**22.0**	**78.0**	---	---	---	---	---	---	< 1.9	< 1.8	< 1.45	---	< 1.8	< 1.50	---	< 2.1	< 1.47
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 6.4	**3.20**	**18.0**	< 20	< 20	< 6	< 7.2	< 6.4	< 6.4	< 1.9	< 1.8	< 1.45	< 20	< 1.8	< 1.50	< 20	< 2.1	< 1.47
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 3.6	< 1.9	**4.80**	< 20	< 20	< 3.4	< 6.6	< 3.6	< 3.6	< 1.9	< 1.8	< 1.45	< 20	< 1.8	< 1.50	< 20	< 2.1	< 1.47
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 7	---	---	< 20	< 20	< 12	< 6.6	< 7	< 7	---	---	< 14.5	< 20	---	< 15.0	< 20	---	< 14.7
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 7.1	---	---	< 20	< 20	< 7.9	< 9.4	< 7.1	< 7.1	---	---	< 14.5	< 20	---	< 15.0	< 20	---	< 14.7
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	< 1.9	< 1.9	---	---	---	---	---	---	< 1.9	< 1.8	< 1.45	---	< 1.8	< 1.50	---	< 2.1	< 1.47
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	< 1.9	< 1.9	---	---	---	---	---	---	< 1.9	< 1.8	< 1.45	---	< 1.8	< 1.50	---	< 2.1	< 1.47
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 7	---	---	< 20	< 20	< 10	< 9	< 7	< 7	---	---	< 1.45	< 20	---	< 1.50	< 20	---	< 1.47
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 7.8	---	---	< 20	< 20	< 13	< 3.5	< 7.8	< 7.8	---	---	< 1.45	< 20	---	< 1.50	< 20	---	< 1.47
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	**31.0**	**7.10**	---	---	---	---	---	---	< 1.9	< 1.8	< 5.80	---	< 1.8	< 6.00	---	< 2.1	< 5.87
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**880**	**830**	**750**	< 20	< 20	< 6.6	< 5.9	< 6.5	< 6.5	< 1.9	< 1.8	< 5.80	< 20	< 1.8	**4.00 J**	< 20	< 2.1	< 5.87
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**90.0**	**150**	**390**	< 20	< 20	---	< 5.9	< 6.7	< 6.7	< 1.9	< 1.8	< 5.80	< 20	< 1.8	< 6.00	< 20	< 2.1	< 5.87
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	< 1.9	< 1.9	---	---	---	---	---	---	< 1.9	< 1.8	< 2.90	---	< 1.8	< 3.00	---	< 2.1	< 2.94
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	< 1.9	< 1.9	---	---	---	---	---	---	< 1.9	< 1.8	< 2.90	---	< 1.8	< 3.00	---	< 2.1	< 2.94
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	< 1.9	< 1.9	---	---	---	---	---	---	< 1.9	< 1.8	< 2.90	---	< 1.8	< 3.00	---	< 2.1	< 2.94
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	**88.0**	**93.0**	---	---	---	---	---	---	< 1.9	< 1.8	---	---	< 1.8	---	---	< 2.1	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	**100.0**	**260**	---	---	---	---	---	---	< 1.9	< 1.8	---	---	< 1.8	---	---	< 2.1	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	< 1.9	< 1.9	---	---	---	---	---	---	< 1.9	< 1.8	< 2.90	---	< 1.8	< 3.00	---	< 2.1	< 2.94
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	< 1.9	< 1.9	---	---	---	---	---	---	< 1.9	< 1.8	< 5.80	---	< 1.8	< 6.00	---	< 2.1	< 5.87
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	< 1.9	< 1.9	---	---	---	---	---	---	< 1.9	< 1.8	< 5.80	---	< 1.8	< 6.00	---	< 2.1	< 5.87
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	< 1.9	< 1.9	---	---	---	---	---	---	< 1.9	< 1.8	< 5.80	---	< 1.8	< 6.00	---	< 2.1	< 5.87
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	< 1.9	< 1.9	---	---	---	---	---	---	< 1.9	< 1.8	< 5.80	---	< 1.8	< 6.00	---	< 2.1	< 5.87

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	HW-2S					64-M1	MW-8-90	M2-89	M3-89	M4-89	M5-90	M9-90	MW-1				MW-3D	
Sample ID			HW-002S	HW-002S	HW-002S	HW-002S	HW-002S	64-M1	8-90	M2-89	M3-89	M4-89	M5-90	M9-90	MW-001	MW-001	MW-001	MW-001	MW-003D	MW-003D
Sample Date			7/6/2016	8/18/2016	5/3/2017	11/21/2023	6/14/2024	6/19/2024	6/16/2015	6/20/2024	6/20/2024	6/20/2024	6/19/2024	6/20/2024	11/22/2013	6/3/2014	6/4/2014	4/18/2017	8/18/2016	6/11/2024
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**7.80**	< 20	**13.0**	**3.60**	**1.26 J**	**1.63 J**	**0.473 J**	**0.473 J**	**0.970 J**	**0.337 J**	**1.51 J**	**1.34 J**	---	**290**	**280**	**230**	**20.0**	**8.88**
Perfluorooctanoic acid (PFOA)	NS	40000000	**5.90**	< 20	**8.20**	**3.00**	**1.32 J**	**4.33**	**0.975 J**	**0.975 J**	**2.29**	< 1.64 U	**2.81**	**2.26**	**320**	**880**	**590**	**290**	**10.00**	**7.65**
Perfluorononanoic acid (PFNA)	NS	40000000	**14.0**	**17.0**	**19.0**	**22.0**	**7.38**	< 1.70	< 1.43	< 1.43	< 1.59	< 1.64	< 1.67	< 1.48	---	**380**	**230**	**140**	< 20	**9.91**
Perfluorodecanoic acid (PFDA)	NS	40000000	< 20	< 20	< 20	< 1.9	< 1.45	< 1.70	< 1.43	< 1.43	< 1.59	< 1.64	< 1.67	< 1.48	---	---	---	**7.10**	< 20	< 1.49
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**30.0**	**24.0**	**31.0**	**14.0**	**5.08**	**3.12**	**0.545 J**	**0.545 J**	**3.73**	**0.674 J**	**1.15 J**	**1.64**	---	**2900**	**2000**	**1700**	**83.0**	**24.8**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**170**	**300**	**150**	**150**	**77.4**	**3.78**	**1.69 F**	**1.69 F**	**2.43**	**2.10**	**2.45**	**3.94**	**3900**	**4400**	**3200**	**2600**	**98.0**	**73.6**
PFAS SUM	20	NS	**228**	**341**	**221**	**193**	**92.4**	**12.9**	**3.68**	**3.68**	**9.42**	**3.11**	**7.92**	**9.18**	**4220**	**8850**	**6300**	**4967**	**211**	**125**
Perfluorobutanoic Acid (PFBA)	NS	NS	**7.90**	< 20	< 20	**2.60**	< 5.78	**3.43 J**	**3.81 J**	**3.81 J**	**6.43**	**1.88 J**	**6.53 J**	**2.01 J**	---	---	---	**160**	**10.00**	**6.86**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**12.0**	**9.70**	**10.00**	**3.60**	**1.28 J**	**4.15**	**0.925 J**	**0.925 J**	**2.22 J**	< 3.29	**4.18**	**2.47 J**	---	---	---	**670**	**37.0**	**8.35**
Perfluorohexanoic acid (PFHxA)	NS	NS	**11.0**	**14.0**	**14.0**	**4.20**	**1.16 J**	**3.12**	**0.767 J**	**0.767 J**	**1.70**	< 1.64	**3.19**	**2.10**	---	---	---	**660**	**45.0**	**9.79**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 20	< 20	< 20	< 1.9	< 1.45	< 1.70	< 1.43	< 1.43	< 1.59	< 1.64	< 1.67	< 1.48	---	---	---	**6.30**	< 20	**2.26**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 20	< 20	< 20	< 1.9	< 1.45	< 1.70	< 1.43	< 1.43	< 1.59	< 1.64	< 1.67	< 1.48	---	---	---	< 20	< 20	< 1.49
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 20	< 20	< 20	< 1.9	< 1.45	< 1.70	**< 1.43**	< 1.43	< 1.59	< 1.64	< 1.67	< 1.48	---	---	---	< 20	< 20	< 1.49
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 20	< 20	< 20	< 1.9	< 1.45	< 1.70	**< 1.43**	< 1.43	< 1.59	< 1.64	< 1.67	< 1.48	---	---	---	< 20	< 20	< 1.49
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**12.0**	**5.10**	< 20	< 1.9	**0.629 J**	**5.25**	**13.2**	**13.2**	**34.2**	**2.17**	**12.2**	< 1.48	---	**300**	**230**	**150**	**11.0**	**2.60**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	---	< 1.9	**0.506 J**	**0.571 J**	< 1.43	< 1.43	< 1.59	< 1.64	< 1.67	< 1.48	---	---	---	---	---	**3.94**
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**6.30**	< 20	< 20	< 1.9	**0.651 J**	< 1.70	< 1.43	< 1.43	< 1.59	< 1.64	< 1.67	< 1.48	---	---	---	**75.0**	< 20	**0.975 J**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	---	< 1.9	< 1.45	< 1.70	< 1.43	< 1.43	< 1.59	< 1.64	< 1.67	< 1.48	---	---	---	---	---	< 1.49
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 20	< 20	< 20	< 1.9	< 1.45	< 1.70	< 1.43	< 1.43	< 1.59	< 1.64	< 1.67	< 1.48	---	---	---	< 20	< 20	< 1.49
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 20	< 20	< 20	< 1.9	< 1.45	< 1.70	< 1.43	< 1.43	< 1.59	< 1.64	< 1.67	< 1.48	---	---	---	**8.80**	< 20	< 1.49
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 20	< 20	< 20	---	< 14.5	< 17.0	< 14.3	< 1.43	< 15.9	< 16.4	< 16.7	< 14.8	---	---	---	< 20	< 20	< 14.9
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 20	< 20	< 20	---	< 14.5	< 17.0	< 14.3	< 1.43	< 15.9	< 16.4	< 16.7	< 14.8	---	---	---	< 20	< 20	< 14.9
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	< 1.9	< 1.45	< 1.70	< 1.43	< 14.3	< 1.59	< 1.64	< 1.67	< 1.48	---	---	---	---	---	< 1.49
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	< 1.9	< 1.45	< 1.70	< 1.43	< 14.3	< 1.59	< 1.64	< 1.67	< 1.48	---	---	---	---	---	< 1.49
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 20	< 20	< 20	---	< 1.45	< 1.70	< 1.43	< 1.43	< 1.59	< 1.64	< 1.67	< 1.48	---	---	---	< 20	< 20	< 1.49
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 20	< 20	< 20	---	< 1.45	< 1.70	< 1.43	< 1.43	< 1.59	< 1.64	< 1.67	< 1.48	---	---	---	< 20	< 20	< 1.49
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	< 1.9	< 5.78	< 6.82	< 5.74	< 5.74	< 6.36	< 6.58	< 6.69	< 5.91	---	---	---	---	---	< 5.95
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	< 20	< 20	< 20	< 1.9	< 5.78	**95.2**	< 5.74	< 5.74	< 6.36	< 6.58	< 6.69	< 5.91	---	---	---	**420**	< 20	**5.05 J**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 20	< 20	< 20	< 1.9	< 5.78	< 6.82	< 5.74	< 5.74	< 6.36	< 6.58	< 6.69	< 5.91	---	---	---	< 20	< 20	< 5.95
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	< 1.9	< 2.89	< 3.41	< 2.87	< 2.87	< 3.18	< 3.29	< 3.35	< 2.95	---	---	---	---	---	< 2.98
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	< 1.9	< 2.89	< 3.41	< 2.87	< 2.87	< 3.18	< 3.29	< 3.35	< 2.95	---	---	---	---	---	< 2.98
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	< 1.9	< 2.89	< 3.41	< 2.87	< 2.87	< 3.18	< 3.29	< 3.35	< 2.95	---	---	---	---	---	< 2.98
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	< 1.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	< 1.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	< 1.9	< 2.89	< 3.41	< 2.87	< 2.87	< 3.18	< 3.29	< 3.35	< 2.95	---	---	---	---	---	< 2.98
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	< 1.9	< 5.78	< 6.82	< 5.74	< 5.74	< 6.36	< 6.58	< 6.69	< 5.91	---	---	---	---	---	< 5.95
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	< 1.9	< 5.78	< 6.82	< 5.74	< 5.74	< 6.36	< 6.58	< 6.69	< 5.91	---	---	---	---	---	< 5.95
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	< 1.9	< 5.78	< 6.82	< 5.74	< 5.74	< 6.36	< 6.58	< 6.69	< 5.91	---	---	---	---	---	< 5.95
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	< 1.9	< 5.78	< 6.82	< 5.74	< 5.74	< 6.36	< 6.58	< 6.69	< 5.91	---	---	---	---	---	< 5.95

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	MW-3I		MW-3S											MW-6		MW-7	MW-9D	MW-9S
Sample ID			MW-003I	MW-003I	MW-003S	MW-003S	MW-003S	MW-003S	MW-003S	MW-003S	MW-003S	MW-003S	MW-003S	V-035I - mis labe	MW-003S	MW-006	MW-006	MW-007	MW-009D	MW-009S
Sample Date			8/18/2016	6/11/2024	6/3/2014	8/18/2016	11/3/2021	4/21/2022	7/27/2022	11/9/2022	1/31/2023	11/2/2023	1/31/2024	4/18/2024	6/11/2024	4/1/2015	4/25/2017	11/22/2013	6/12/2024	6/12/2024
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**200**	**66.2**	**490**	**260**	**210**	**160**	**190**	**530**	**81.0**	**210**	**120**	**240**	**215**	**370**	**220**	---	**23.5**	**13.4**
Perfluorooctanoic acid (PFOA)	NS	40000000	**170**	**66.1**	**530**	**690**	**360**	**330**	**470**	**890**	**220**	**280**	**230**	**430**	**400**	**510**	**140**	**580**	**21.5**	**52.7**
Perfluorononanoic acid (PFNA)	NS	40000000	**180**	**156**	**160**	**64.0**	**36.0**	**64.0**	**68.0**	**110**	**24.0**	**97.0**	**47.0**	**76.0**	**73.0**	**180**	**220**	---	**34.5**	**51.6**
Perfluorodecanoic acid (PFDA)	NS	40000000	**14.0**	**8.25**	---	**9.30**	< 3.9	**7.20**	**10.00**	**8.30**	< 10	**8.00**	< 4.1	**7.60**	**8.19**	---	**5.70**	---	**1.85**	**3.83**
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**920**	**122**	**2200**	**1900**	**1800**	**1100**	**1200**	**1600**	**910**	**890**	**1100**	**1700**	**1030**	**2100**	**860**	---	**57.2**	**264**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**3200**	**698**	**4900**	**1900**	**1400**	**1300**	**1600**	**4200**	**830**	**2800**	**1700**	**2100**	**2060**	**5700**	**2400**	**3100**	**218**	**1780**
PFAS SUM	20	NS	**4684**	**1117**	**8280**	**4823**	**3806**	**2961**	**3538**	**7338**	**2065**	**4285**	**3197**	**4554**	**3786**	**8860**	**3846**	**3680**	**357**	**2166**
Perfluorobutanoic Acid (PFBA)	NS	NS	**96.0**	**37.0**	---	**160**	**91.0**	**100.0**	**130**	**180**	**54.0**	**110**	**91.0**	**130**	**110**	---	**240**	---	**11.6**	**19.0**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**330**	**90.0**	---	**260**	**470**	**320**	**470**	**780**	**160**	**430**	**270**	**390**	**447**	---	**1100**	---	**28.9**	**51.0**
Perfluorohexanoic acid (PFHxA)	NS	NS	**550**	**86.4**	---	**390**	**370**	**290**	**410**	**520**	**200**	**280**	**330**	**360**	**322**	---	**900**	---	**32.4**	**70.2**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**44.0**	**23.6**	---	**6.00**	< 6.2	**14.0**	**17.0**	**16.0**	< 10	**19.0**	**6.10**	**17.0**	**14.8**	---	**38.0**	---	**8.04**	**2.42**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 20	< 1.49	---	< 20	< 8	< 5.9	< 8	< 1.8	< 10	< 1.8	< 4.1	< 1.9	< 1.47	---	< 20	---	< 1.45	< 1.44
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 20	< 1.49	---	< 20	< 6.4	< 4.8	< 6.4	< 1.8	< 10	< 1.8	< 4.1	< 1.9	< 1.47	---	< 20	---	< 1.45	< 1.44
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 20	< 1.49	---	< 20	< 6.8	< 3.7	< 6.8	< 1.8	< 10	< 1.8	< 4.1	< 1.9	< 1.47	---	< 20	---	< 1.45	< 1.44
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**110**	**8.41**	< 90	**57.0**	**42.0**	**52.0**	**44.0**	**30.0**	**64.0**	**41.0**	**98.0**	**69.0**	**24.6**	**140**	**69.0**	---	**5.76**	**18.2**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	**14.5**	---	---	---	**90.0**	---	**65.0**	**71.0**	**70.0**	**110**	**140**	**56.5**	---	---	---	**8.23**	**24.2**
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**75.0**	**10.8**	---	**40.0**	**19.0**	**25.0**	**24.0**	**76.0**	**28.0**	**86.0**	**32.0**	**75.0**	**33.6**	---	**51.0**	---	**3.38**	**7.26**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	< 1.49	---	---	---	< 6.4	---	**16.0**	< 10	**20.0**	**7.00**	**10.00**	**0.858 J**	---	---	---	< 1.45	< 1.44
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 20	< 1.49	---	< 20	< 6.4	< 5.3	< 6.4	< 1.8	< 10	**2.30**	< 4.1	< 1.9	< 1.47	---	< 20	---	< 1.45	< 1.44
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 20	< 1.49	---	**25.0**	**67.0**	< 8.1	**22.0**	**76.0**	< 10	**36.0**	**36.0**	**35.0**	**23.1**	---	**17.0**	---	< 1.45	**9.74**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 20	< 14.9	---	< 20	< 7	---	< 7	---	---	---	---	---	< 14.7	---	< 20	---	< 14.5	< 14.4
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 20	**2.27 J**	---	< 20	< 7.1	---	< 7.1	---	---	---	---	---	< 14.7	---	< 20	---	< 14.5	< 14.4
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	< 1.49	---	---	---	---	---	**3.40**	< 10	**2.20**	< 4.1	< 1.9	< 1.47	---	---	---	< 1.45	< 1.44
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	< 1.49	---	---	---	---	---	< 1.8	< 10	< 1.8	< 4.1	< 1.9	< 1.47	---	---	---	< 1.45	< 1.44
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 20	< 1.49	---	< 20	< 7	---	< 7	---	---	---	---	---	< 1.47	---	< 20	---	< 1.45	< 1.44
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 20	< 1.49	---	< 20	< 7.8	---	< 7.8	---	---	---	---	---	**0.975 J**	---	< 20	---	< 1.45	< 1.44
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	< 5.96	---	---	---	---	---	< 1.8	< 10	< 1.8	< 4.1	< 1.9	< 5.86	---	---	---	< 5.80	< 5.75
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**68.0**	**34.0**	---	**88.0**	**120**	**29.0**	**71.0**	**2400**	**22.0**	**220**	**78.0**	**160**	**186**	---	**490**	---	**6.74**	< 5.75
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**16.0**	**6.75**	---	**7.70**	< 6.7	< 7.5	< 6.7	**11.0**	< 10	**11.0**	< 4.1	**2.90**	**3.01 J**	---	**17.0**	---	< 5.80	< 5.75
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	< 2.98	---	---	---	---	---	< 1.8	< 10	< 1.8	< 4.1	< 1.9	< 2.93	---	---	---	< 2.90	< 2.87
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	< 2.98	---	---	---	---	---	< 1.8	< 10	< 1.8	< 4.1	< 1.9	< 2.93	---	---	---	< 2.90	< 2.87
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	< 2.98	---	---	---	---	---	< 1.8	< 10	< 1.8	< 4.1	< 1.9	< 2.93	---	---	---	< 2.90	< 2.87
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	---	**36.0**	< 10	**20.0**	**10.00**	**29.0**	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	---	**400**	**44.0**	**230**	**110**	**68.0**	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	< 2.98	---	---	---	---	---	< 1.8	< 10	< 1.8	< 4.1	< 1.9	< 2.93	---	---	---	< 2.90	< 2.87
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	< 5.96	---	---	---	---	---	< 1.8	< 10	< 1.8	< 4.1	< 1.9	< 5.86	---	---	---	< 5.80	< 5.75
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	< 5.96	---	---	---	---	---	< 1.8	< 10	< 1.8	< 4.1	< 1.9	< 5.86	---	---	---	< 5.80	< 5.75
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	< 5.96	---	---	---	---	---	< 1.8	< 10	< 1.8	< 4.1	< 1.9	< 5.86	---	---	---	< 5.80	< 5.75
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	< 5.96	---	---	---	---	---	< 1.8	< 10	< 1.8	< 4.1	< 1.9	< 5.86	---	---	---	< 5.80	< 5.75

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	MW-10			MW-12D	MW-12I			MW-12S										
Sample ID			MW-010	MW-010	MW-010	MW-012D	MW-012I	MW-012I	MW-012I	MW-012S	MW-012S	MW-012S	MW-012S	MW-012S	MW-012S	MW-012S	MW-012S	MW-012S	MW-012S	MW-012S
Sample Date			11/22/2013	4/18/2017	6/11/2024	6/12/2024	4/24/2017	11/2/2021	6/12/2024	8/20/2014	4/1/2015	6/26/2018	1/11/2019	4/23/2019	7/23/2019	10/29/2019	2/19/2020	5/12/2020	7/29/2020	10/21/2020
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	---	**90.0**	**57.5**	**29.6**	**36.0**	**73.0**	**65.8**	**230**	**350**	**130**	**490**	**440**	**170**	**310**	**390**	**140**	**120**	**110**
Perfluorooctanoic acid (PFOA)	NS	40000000	**670**	**440**	**345**	**24.4**	**36.0**	**150**	**63.1**	**400**	**470**	**280**	**650**	**920**	**250**	**380**	**580**	**280**	**220**	**280**
Perfluorononanoic acid (PFNA)	NS	40000000	---	**35.0**	**22.5**	**25.6**	**34.0**	**27.0**	**67.7**	**70.0**	**70.0**	**56.0**	**64.0**	**92.0**	**87.0**	**80.0**	**78.0**	**86.0**	**51.0**	**51.0**
Perfluorodecanoic acid (PFDA)	NS	40000000	---	**9.80**	**9.18**	**1.19 J**	**4.50**	< 3.9	**7.70**	---	---	**21.0**	**6.20**	**16.0**	**11.0**	**9.70**	**7.50**	**23.0**	**18.0**	**13.0**
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	---	**610**	**514**	**53.3**	**190**	**670**	**152**	**1400**	**1300**	**1200**	**1500**	**1700**	**880**	**1300**	**1200**	**1100**	**900**	**930**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**2000**	**1700**	**1870**	**149**	**490**	**1400**	**627**	**2500**	**4800**	**3000**	**2700**	**2800**	**2800**	**2300**	**3100**	**3500**	**2900**	**3900**
PFAS SUM	20	NS	**2670**	**2885**	**2818**	**283**	**791**	**2320**	**983**	**4600**	**6990**	**4687**	**5410**	**5968**	**4198**	**4380**	**5356**	**5129**	**4209**	**5284**
Perfluorobutanoic Acid (PFBA)	NS	NS	---	**22.0**	**25.2**	**14.6**	**23.0**	**27.0**	**36.5**	---	---	< 5.5	**230**	**210**	**120**	**190**	**190**	**95.0**	**91.0**	**57.0**
Perfluoropentanoic Acid (PFPeA)	NS	NS	---	**69.0**	**77.7**	**38.0**	**130**	**140**	**90.3**	---	---	**270**	**900**	**810**	**390**	**740**	**720**	**260**	**200**	**170**
Perfluorohexanoic acid (PFHxA)	NS	NS	---	**150**	**132**	**36.1**	**110**	**170**	**73.3**	---	---	**280**	**750**	**630**	**300**	**490**	**550**	**260**	**190**	**180**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	---	**75.0**	**20.1**	**3.21**	**24.0**	**19.0**	**22.4**	---	---	**16.0**	< 2.5	**11.0**	**19.0**	**12.0**	**5.20**	**21.0**	**21.0**	**15.0**
Perfluorododecanoic acid (PFDoDA)	NS	NS	---	< 20	< 1.43	< 1.52	< 20	< 8	< 1.52	---	---	< 5	< 5	< 6.8	< 6.8	< 6.8	< 6.8	< 2.5	< 6.8	< 8
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	---	< 20	< 1.43	< 1.52	< 20	< 6.4	< 1.52	---	---	< 3.8	< 3.8	< 6.9	< 6.9	< 6.9	< 6.9	< 3	< 6.9	< 6.4
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	---	< 20	< 1.43	< 1.52	< 20	< 6.8	< 1.52	---	---	< 2.7	< 2.7	< 6.7	< 6.7	< 6.7	< 6.7	< 1.6	< 6.7	< 6.8
Perfluorobutanesulfonic acid (PFBS)	NS	NS	---	**17.0**	**19.9**	**5.60**	< 20	**23.0**	**7.90**	< 90	< 90	**33.0**	**34.0**	**28.0**	**24.0**	**29.0**	**13.0**	**19.0**	**19.0**	**24.0**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	**27.6**	**7.50**	---	---	**15.3**	---	---	---	---	---	---	---	---	**28.0**	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	---	**17.0**	**27.8**	**2.87**	< 20	**9.70**	**12.3**	---	---	---	---	**60.0**	**23.0**	**30.0**	**36.0**	**26.0**	**21.0**	**26.0**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	**1.98**	< 1.52	---	---	< 1.52	---	---	---	---	---	---	---	---	< 5.5	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	---	< 20	< 1.43	< 1.52	< 20	< 6.4	< 1.52	---	---	< 6	< 6	< 7.2	< 7.2	< 7.2	< 7.2	< 3.6	< 7.2	< 6.4
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	---	**2700**	**723**	**1.30 J**	**200**	**310**	**18.7**	---	---	**290**	**190**	**170**	**270**	**150**	**98.0**	**170**	**160**	**120**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	---	< 20	< 14.3	< 15.2	< 20	< 7	< 15.2	---	---	< 12	< 12	< 6.6	< 6.6	< 6.6	< 6.6	---	< 6.6	< 7
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	---	< 20	< 14.3	< 15.2	< 20	< 7.1	< 15.2	---	---	< 7.9	< 7.9	< 9.4	< 9.4	< 9.4	< 9.4	---	< 9.4	< 7.1
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	**20.0 F**	< 1.52	---	---	< 1.52	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	< 1.43	< 1.52	---	---	< 1.52	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	---	< 20	< 1.43	< 1.52	< 20	< 7	< 1.52	---	---	< 10	< 10	< 9	< 9	< 9	< 9	---	< 9	< 7
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	---	< 20	< 1.43	< 1.52	< 20	< 7.8	< 1.52	---	---	< 13	< 13	< 3.5	**5.70**	< 3.5	< 3.5	---	< 3.5	< 7.8
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	< 5.72	< 6.06	---	---	< 6.09	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	---	**48.0**	**15.0**	**2.30 J**	**88.0**	**31.0**	**13.6**	---	---	**170**	**1100**	**1200**	**240**	**1200**	**870**	**100.0**	**60.0**	**67.0**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	---	**94.0**	**55.6**	< 6.06	< 20	< 6.7	**5.37 J**	---	---	---	---	**32.0**	**19.0**	**17.0**	**20.0**	**49.0**	**18.0**	**22.0**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	< 2.86	< 3.03	---	---	< 3.05	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	< 2.86	< 3.03	---	---	< 3.05	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	< 2.86	< 3.03	---	---	< 3.05	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	< 2.86	< 3.03	---	---	< 3.05	---	---	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	< 5.72	< 6.06	---	---	< 6.09	---	---	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	< 5.72	< 6.06	---	---	< 6.09	---	---	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	< 5.72	< 6.06	---	---	< 6.09	---	---	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	< 5.72	< 6.06	---	---	< 6.09	---	---	---	---	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	MW-12S												MW-13D			MW-13S	MW-15	MW-15D
Sample ID			MW-012S	MW-012I	MW-012S	MW-012S	MW-012S	MW-012S	MW-012S	MW-012S	MW-012S	MW-012S	MW-012S	MW-012S	MW-013	MW-013	MW-013D	MW-013S	MW-015	MW-015D
Sample Date			1/27/2021	11/2/2021	1/25/2022	4/20/2022	7/28/2022	2/1/2023	4/5/2023	7/25/2023	11/1/2023	2/1/2024	4/18/2024	6/12/2024	7/29/2021	11/10/2022	6/13/2024	6/19/2024	4/26/2017	4/2/2015
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**74.0**	**14.0**	**63.0**	**75.0**	**100.0**	**66.0**	**71.0**	**120**	**140**	**130**	**78.0**	**93.6**	< 20	**30.0**	**16.9**	**16.9**	**13.0**	**40.0**
Perfluorooctanoic acid (PFOA)	NS	40000000	**230**	**46.0**	**100.0**	**170**	**350**	**190**	**150**	**190**	**150**	**230**	**93.0**	**160**	< 20	**17.0**	**28.6**	**107**	**27.0**	**60.0**
Perfluorononanoic acid (PFNA)	NS	40000000	**28.0**	**5.60**	**27.0**	**18.0**	**17.0**	**21.0**	**14.0**	**27.0**	**24.0**	**32.0**	**24.0**	**42.1**	< 20	**4.50**	**16.5**	**38.7**	< 20	< 20
Perfluorodecanoic acid (PFDA)	NS	40000000	**21.0**	< 3.9	**4.70**	< 6.4	**7.50**	< 10	< 4.1	**5.80**	< 4.2	< 4.1	**3.30**	**4.47**	< 20	< 1.9	**4.43**	**4.18**	< 20	---
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**630**	**170**	**390**	**830**	**900**	**580**	**400**	**800**	**470**	**440**	**270**	**380**	< 20	**95.0**	**186**	**404**	**21.0**	**60.0**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**2300**	**360**	**950**	**1700**	**1500**	**1100**	**630**	**1100**	**660**	**600**	**750**	**1070**	< 20	**200**	**287**	**1140**	**19.0**	**60.0**
PFAS SUM	20	NS	**3283**	**596**	**1535**	**2793**	**2875**	**1957**	**1265**	**2243**	**1444**	**1432**	**1218**	**1750**	**ND**	**347**	**539**	**1711**	**80.0**	**220**
Perfluorobutanoic Acid (PFBA)	NS	NS	**34.0**	**5.70**	**32.0**	**34.0**	**54.0**	**48.0**	**44.0**	**67.0**	**84.0**	**60.0**	**31.0**	**48.4**	< 20	**13.0**	**12.8**	**12.5**	**9.00**	---
Perfluoropentanoic Acid (PFPeA)	NS	NS	**110**	**17.0**	**100.0**	**120**	**190**	**160**	**150**	**230**	**330**	**200**	**97.0**	**148**	< 20	**48.0**	**28.4**	**29.9**	**28.0**	---
Perfluorohexanoic acid (PFHxA)	NS	NS	**150**	**29.0**	**110**	**170**	**270**	**180**	**130**	**210**	**250**	**180**	**84.0**	**121**	< 20	**42.0**	**25.2**	**81.4**	**24.0**	---
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**16.0**	< 6.2	**16.0**	**29.0**	**31.0**	**31.0**	**17.0**	**15.0**	**13.0**	**7.90**	**16.0**	**11.3**	< 20	**3.20**	**8.78**	**1.75**	< 20	---
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 5.9	< 8	< 8	< 5.9	< 8	< 10	< 4.1	< 1.8	< 4.2	< 4.1	< 1.7	< 1.47	< 20	< 1.9	< 1.50	< 1.50	< 20	---
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 4.8	< 6.4	< 6.4	< 4.8	< 6.4	< 10	< 4.1	< 1.8	< 4.2	< 4.1	**6.20**	< 1.47	< 20	< 1.9	< 1.50	< 1.50	< 20	---
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 3.7	< 6.8	< 6.8	< 3.7	< 6.8	< 10	< 4.1	< 1.8	< 4.2	< 4.1	< 1.7	< 1.47	< 20	< 1.9	< 1.50	< 1.50	< 20	---
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**23.0**	< 5.6	**13.0**	**21.0**	**32.0**	**18.0**	**11.0**	**61.0**	**23.0**	**15.0**	**8.30**	**16.1**	< 20	**5.90**	**3.72**	**16.7**	< 20	< 90
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	**29.0**	---	---	**33.0**	---	**24.0**	**17.0**	**58.0**	**35.0**	**24.0**	**15.0**	**23.1**	---	**9.20**	**7.60**	**17.6**	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**23.0**	< 6.5	**10.00**	**16.0**	**18.0**	**15.0**	**13.0**	**27.0**	**15.0**	**19.0**	**22.0**	**19.8**	< 20	**3.70**	**3.51**	**15.0**	< 20	---
Perfluorononanesulfonic Acid (PFNS)	NS	NS	< 6.4	---	---	< 6.4	---	< 10	**4.50**	**5.60**	< 4.2	< 4.1	**4.30**	**0.729 J**	---	< 1.9	< 1.50	< 1.50	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 5.3	< 6.4	< 6.4	< 5.3	< 6.4	< 10	< 4.1	**2.00**	< 4.2	< 4.1	< 1.7	< 1.47	< 20	< 1.9	< 1.50	< 1.50	< 20	---
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	**150**	**9.90**	**190**	**230**	**240**	**350**	**370**	**320**	**360**	**140**	**28.0**	**113**	< 20	< 1.9	**1.60**	**604**	< 20	---
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	---	< 7	< 7	---	< 7	---	---	---	---	---	---	< 14.7	< 20	---	< 15.0	< 15.0	< 20	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	---	< 7.1	< 7.1	---	< 7.1	---	---	---	---	---	---	< 14.7	< 20	---	< 15.0	< 15.0	< 20	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	---	< 10	< 4.1	**4.00**	< 4.2	< 4.1	**1.70**	< 1.47	---	< 1.9	< 1.50	**4.33 F**	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	---	< 10	< 4.1	< 1.8	< 4.2	< 4.1	< 1.7	< 1.47	---	< 1.9	< 1.50	< 1.50	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	---	< 7	< 7	---	< 7	---	---	---	---	---	---	< 1.47	---	---	< 1.50	< 1.50	< 20	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	---	< 7.8	< 7.8	---	< 7.8	---	---	---	---	---	---	**1.49**	---	---	< 1.50	**4.01**	< 20	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	---	< 10	< 4.1	< 1.8	< 4.2	< 4.1	< 1.7	< 5.89	---	< 1.9	< 5.99	< 6.01	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**310**	< 6.5	**22.0**	**65.0**	**34.0**	**31.0**	**26.0**	**33.0**	**95.0**	**200**	**87.0**	**91.6**	< 20	**12.0**	**10.4**	**18.8**	< 20	---
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**160**	< 6.7	< 6.7	**30.0**	**23.0**	< 10	< 4.1	**8.10**	< 4.2	< 4.1	**4.80**	**5.35 J**	< 20	< 1.9	**3.38 J**	**44.0**	< 20	---
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	---	< 10	< 4.1	< 1.8	< 4.2	< 4.1	< 1.7	< 2.94	---	< 1.9	< 3.00	< 3.00	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	---	< 10	< 4.1	< 1.8	< 4.2	< 4.1	< 1.7	< 2.94	---	< 1.9	< 3.00	< 3.00	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	---	< 10	< 4.1	< 1.8	< 4.2	< 4.1	< 1.7	< 2.94	---	< 1.9	< 3.00	< 3.00	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	**23.0**	**20.0**	**21.0**	**14.0**	**14.0**	**4.50**	---	---	**7.20**	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	**100.0**	**69.0**	**110**	**55.0**	**85.0**	**60.0**	---	---	**2.50**	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	---	< 10	< 4.1	< 1.8	< 4.2	< 4.1	< 1.7	< 2.94	---	< 1.9	< 3.00	< 3.00	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	---	< 10	< 4.1	< 1.8	< 4.2	< 4.1	< 1.7	< 5.89	---	< 1.9	< 5.99	< 6.01	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	---	< 10	< 4.1	< 1.8	< 4.2	< 4.1	< 1.7	< 5.89	---	< 1.9	< 5.99	< 6.01	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	---	< 10	< 4.1	< 1.8	< 4.2	< 4.1	< 1.7	< 5.89	---	< 1.9	< 5.99	< 6.01	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	---	< 10	< 4.1	< 1.8	< 4.2	< 4.1	< 1.7	< 5.89	---	< 1.9	< 5.99	< 6.01	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	MW-15D		MW-15S	MW-19A	MW-19B	MW-21	MW-22											
Sample ID			MW-015D	MW-015D	MW-015S	MW-019A	MW-019B	MW-021	MW-022	MW-022	MW-022	MW-022	MW-022	MW-022	MW-022	MW-022	MW-022	MW-022	MW-022	MW-022
Sample Date			11/2/2023	6/12/2024	6/12/2024	6/12/2024	6/12/2024	6/13/2024	4/6/2015	6/26/2018	1/11/2019	4/23/2019	7/23/2019	10/29/2019	2/19/2020	5/12/2020	7/29/2020	10/21/2020	1/27/2021	5/20/2021
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**4.70**	**3.38**	**3.19**	**42.5**	**0.856 J**	**43.0**	**20.0**	**13.0**	**69.0**	**49.0**	**33.0**	**61.0**	**38.0**	**32.0**	**27.0**	**100.0**	**88.0**	**65.0**
Perfluorooctanoic acid (PFOA)	NS	40000000	**9.60**	**8.52**	**7.22**	**43.0**	**2.74**	**46.0**	**90.0**	**30.0**	**140**	**160**	**190**	**150**	**230**	**120**	**92.0**	**160**	**250**	**150**
Perfluorononanoic acid (PFNA)	NS	40000000	< 1.9	**2.55**	**0.919 J**	**50.6**	**0.779 J**	**55.0**	< 20	**9.00**	< 8.7	**8.10**	**7.60**	**8.30**	**5.00**	**10.00**	**14.0**	**14.0**	**7.00**	**24.0**
Perfluorodecanoic acid (PFDA)	NS	40000000	**1.90**	**2.18**	< 1.41	**4.50**	< 1.53	**21.3**	---	**7.80**	< 6.1	< 4.1	< 4.1	< 4.1	< 4.1	**1.30**	**5.20**	**4.50**	**1.40**	**15.0**
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**11.0**	**7.84**	**6.59**	**107**	**2.58**	**217**	**340**	**130**	**680**	**600**	**520**	**690**	**540**	**330**	**360**	**740**	**800**	**570**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**37.0**	**29.1**	**11.9**	**369**	**7.30**	**998**	**600**	**320**	**350**	**320**	**410**	**510**	**460**	**380**	**790**	**680**	**470**	**2300**
PFAS SUM	20	NS	**64.2**	**53.6**	**29.8**	**617**	**14.3**	**1380**	**1050**	**510**	**1239**	**1137**	**1161**	**1419**	**1273**	**873**	**1288**	**1699**	**1616**	**3124**
Perfluorobutanoic Acid (PFBA)	NS	NS	**3.40**	**3.36 J**	**1.96 J**	**25.3**	**1.32 J**	**24.8**	---	**10.00**	**27.0**	**21.0**	< 7	**29.0**	**10.00**	**9.60**	**16.0**	**40.0**	**31.0**	**28.0**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**11.0**	**10.7**	**4.61**	**69.4**	**1.27 J**	**72.2**	---	**18.0**	**99.0**	**54.0**	**26.0**	**97.0**	**50.0**	**33.0**	**39.0**	**130**	**93.0**	**97.0**
Perfluorohexanoic acid (PFHxA)	NS	NS	**8.30**	**7.18**	**3.73**	**62.5**	**1.03 J**	**66.7**	---	**20.0**	**160**	**88.0**	**47.0**	**160**	**84.0**	**54.0**	**49.0**	**200**	**200**	**120**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 1.9	< 1.54	< 1.41	**5.93**	< 1.53	**58.0**	---	< 2.5	< 2.5	< 4.3	< 4.3	< 4.3	< 4.3	**0.71**	**4.70**	< 6.2	**1.70**	**22.0**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 1.9	< 1.54	< 1.41	< 1.49	< 1.53	< 1.45	---	< 5	< 5	< 6.8	< 6.8	< 6.8	< 6.8	< 0.25	< 6.8	< 8	< 0.59	< 8
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 1.9	< 1.54	< 1.41	< 1.49	< 1.53	< 1.45	---	< 3.8	< 3.8	< 6.9	< 6.9	< 6.9	< 6.9	< 0.3	< 6.9	< 6.4	< 0.48	< 6.4
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 1.9	< 1.54	< 1.41	< 1.49	< 1.53	< 1.45	---	< 2.7	< 2.7	< 6.7	< 6.7	< 6.7	< 6.7	< 0.16	< 6.7	< 6.8	< 0.37	< 6.8
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 1.9	**2.20**	**0.523 J**	**6.56**	**1.76**	**9.16**	< 90	**8.30**	**13.0**	**9.60**	< 5.1	**19.0**	< 5.1	**3.60**	**15.0**	**25.0**	**16.0**	**9.10**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	< 1.9	**1.00 J**	**0.551 J**	**11.2**	**0.397 J**	**10.5**	---	---	---	---	---	---	---	**5.70**	---	---	**29.0**	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	< 1.9	**0.649 J**	**0.410 J**	**5.79**	< 1.53	**5.89**	---	---	---	**7.60**	**4.80**	**5.60**	**3.60**	**9.40**	**7.50**	**12.0**	**9.00**	**18.0**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	< 1.9	< 1.54	< 1.41	< 1.49	< 1.53	**1.18 J**	---	---	---	---	---	---	---	< 0.55	---	---	< 0.64	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 1.9	< 1.54	< 1.41	< 1.49	< 1.53	**0.825 J**	---	< 6	< 6	< 7.2	< 7.2	< 7.2	< 7.2	< 0.36	< 7.2	< 6.4	< 0.53	< 6.4
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 1.9	< 1.54	< 1.41	< 1.49	< 1.53	**112**	---	**9.50**	**3.60**	< 6.6	< 6.6	**14.0**	< 6.6	**3.50**	**23.0**	**34.0**	**15.0**	**95.0**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	---	< 15.4	< 14.1	< 14.9	< 15.3	< 14.5	---	< 12	< 12	< 6.6	< 6.6	< 6.6	< 6.6	---	< 6.6	< 7	---	< 7
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	---	< 15.4	< 14.1	< 14.9	< 15.3	< 14.5	---	< 7.9	< 7.9	< 9.4	< 9.4	< 9.4	< 9.4	---	< 9.4	< 7.1	---	< 7.1
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	< 1.9	< 1.54	< 1.41	< 1.49	< 1.53	< 1.45	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	< 1.9	< 1.54	< 1.41	< 1.49	< 1.53	< 1.45	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	---	< 1.54	< 1.41	< 1.49	< 1.53	< 1.45	---	< 10	< 10	< 9	< 9	< 9	< 9	---	< 9	< 7	---	< 7
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	---	< 1.54	< 1.41	< 1.49	< 1.53	< 1.45	---	< 13	< 13	< 3.5	< 3.5	< 3.5	< 3.5	---	< 3.5	< 7.8	---	< 7.8
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	< 1.9	< 6.18	< 5.66	< 5.97	< 6.11	< 5.79	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	< 1.9	< 6.18	< 5.66	**10.2**	< 6.11	**10.6**	---	**13.0**	< 6.6	< 5.9	< 5.9	< 5.9	< 5.9	< 0.43	< 5.9	< 6.5	**21.0**	**110**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 1.9	< 6.18	< 5.66	< 5.97	< 6.11	**45.9**	---	---	---	< 5.9	< 5.9	< 5.9	< 5.9	< 0.47	< 5.9	< 6.7	**0.77**	**110**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	< 1.9	< 3.09	< 2.83	< 2.98	< 3.06	< 2.90	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	< 1.9	< 3.09	< 2.83	< 2.98	< 3.06	< 2.90	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	< 1.9	< 3.09	< 2.83	< 2.98	< 3.06	< 2.90	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	< 1.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	< 1.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	< 1.9	< 3.09	< 2.83	< 2.98	< 3.06	< 2.90	---	---	---	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	< 1.9	< 6.18	< 5.66	< 5.97	< 6.11	< 5.79	---	---	---	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	< 1.9	< 6.18	< 5.66	< 5.97	< 6.11	< 5.79	---	---	---	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	< 1.9	< 6.18	< 5.66	< 5.97	< 6.11	< 5.79	---	---	---	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	< 1.9	< 6.18	< 5.66	< 5.97	< 6.11	< 5.79	---	---	---	---	---	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	MW-22											MW-23			MW-28D	MW-28S		MW-32
Sample ID			MW-022	MW-022	MW-022	MW-022	MW-022	MW-022	MW-022	MW-022	MW-022	MW-022	MW-022	MW-023	MW-023	MW-023	MW-028D	MW-028S	MW-028S	MW-032
Sample Date			11/2/2021	1/25/2022	4/20/2022	7/28/2022	2/1/2023	4/5/2023	7/25/2023	11/1/2023	2/1/2024	4/18/2024	6/12/2024	7/29/2021	11/10/2022	6/12/2024	6/12/2024	4/1/2015	6/12/2024	5/3/2017
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**13.0**	**21.0**	**0.88**	**20.0**	< 10	**2.00**	**2.10**	**2.80**	< 1.8	< 2	< 1.46 U	**98.0**	**49.0**	**12.9**	**30.8**	**70.0**	**239**	**20.0**
Perfluorooctanoic acid (PFOA)	NS	40000000	**83.0**	**94.0**	**3.30**	**77.0**	< 10	**7.10**	**15.0**	**14.0**	**4.40**	< 2	**1.42 J**	**76.0**	**120**	**27.4**	**28.8**	**90.0**	**336**	**36.0**
Perfluorononanoic acid (PFNA)	NS	40000000	< 5.1	**5.70**	< 0.8	**8.70**	< 10	< 1.8	**1.80**	**1.90**	< 1.8	< 2	< 1.46	< 20	**4.90**	**2.80**	**27.7**	**50.0**	**68.6**	**7.60**
Perfluorodecanoic acid (PFDA)	NS	40000000	< 3.9	< 3.9	< 0.64	< 3.9	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 1.46	< 20	< 1.9	< 1.48	**1.59**	---	**25.1**	< 20
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**220**	**280**	**18.0**	**370**	**25.0**	**23.0**	**67.0**	**71.0**	**21.0**	**4.50**	**5.79**	**260**	**180**	**58.4**	**164**	**590**	**1180**	**130**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**340**	**430**	**35.0**	**480**	**42.0**	**86.0**	**130**	**160**	**43.0**	**13.0**	**11.1**	**110**	**89.0**	**101**	**232**	**2100**	**671**	**240**
PFAS SUM	20	NS	**656**	**831**	**57.2**	**956**	**67.0**	**118**	**216**	**250**	**68.4**	**17.5**	**18.3**	**544**	**443**	**203**	**485**	**2900**	**2520**	**434**
Perfluorobutanoic Acid (PFBA)	NS	NS	< 3.9	**6.80**	< 0.67	**8.10**	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 5.84	**26.0**	**24.0**	**12.7**	**23.3**	---	**110**	**9.10**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**17.0**	**27.0**	**0.90**	**21.0**	< 10	**2.10**	**3.00**	**3.10**	< 1.8	< 2	< 2.92	**110**	**80.0**	**42.0**	**57.9**	---	**354**	**22.0**
Perfluorohexanoic acid (PFHxA)	NS	NS	**34.0**	**46.0**	**1.60**	**34.0**	< 10	**2.70**	**3.70**	**4.20**	< 1.8	< 2	**0.533 J**	**110**	**66.0**	**33.6**	**53.1**	---	**440**	**33.0**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 6.2	< 6.2	< 0.77	< 6.2	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 1.46	< 20	< 1.9	**1.45 J**	**1.05 J**	---	**86.2**	< 20
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 8	< 8	< 0.59	< 8	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 1.46	< 20	< 1.9	< 1.48	< 1.51	---	< 1.49	< 20
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 6.4	< 6.4	< 0.48	< 6.4	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 1.46	< 20	< 1.9	< 1.48	< 1.51	---	< 1.49	< 20
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 6.8	< 6.8	< 0.37	< 6.8	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 1.46	< 20	< 1.9	< 1.48	< 1.51	---	< 1.49	< 20
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 5.6	**6.90**	< 0.47	**8.80**	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 1.46	< 20	**6.80**	**2.03**	**8.10**	< 90	**39.9**	< 20
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	< 0.73	---	< 10	< 1.8	**2.60**	**3.10**	< 1.8	< 2	**0.416 J**	---	**9.00**	**4.15**	**12.8**	---	**71.3**	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	< 6.5	< 6.5	< 0.57	**8.90**	< 10	< 1.8	**2.10**	**2.60**	< 1.8	< 2	< 1.46	< 20	**9.20**	**1.83**	**4.73**	---	**14.3**	< 20
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	< 0.64	---	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 1.46	---	< 1.9	< 1.48	< 1.51	---	**3.03**	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 6.4	< 6.4	< 0.53	< 6.4	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 1.46	< 20	< 1.9	< 1.48	< 1.51	---	< 1.49	< 20
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 3.6	**11.0**	< 0.81	**7.90**	< 10	< 1.8	**2.80**	< 1.8	< 1.8	< 2	< 1.46	< 20	< 1.9	< 1.48	< 1.51	---	**71.3 F**	**8.30**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 7	< 7	---	< 7	---	---	---	---	---	---	< 14.6	< 20	---	< 14.8	< 15.1	---	< 14.9	< 20
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 7.1	< 7.1	---	< 7.1	---	---	---	---	---	---	< 14.6	< 20	---	< 14.8	< 15.1	---	< 14.9	< 20
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 1.46	---	< 1.9	< 1.48	< 1.51	---	< 1.49	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 1.46	---	< 1.9	< 1.48	< 1.51	---	< 1.49	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 7	< 7	---	< 7	---	---	---	---	---	---	< 1.46	---	---	< 1.48	< 1.51	---	< 1.49	< 20
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 7.8	< 7.8	---	< 7.8	---	---	---	---	---	---	< 1.46	---	---	< 1.48	< 1.51	---	< 1.49	< 20
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 5.84	---	< 1.9	< 5.92	< 6.04	---	< 5.97	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	< 6.5	< 6.5	**1.20**	< 6.5	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 5.84	**58.0**	**15.0**	< 5.92	**4.65 J**	---	**136**	< 20
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 6.7	< 6.7	< 0.75	< 6.7	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 5.84	< 20	< 1.9	< 5.92	< 6.04	---	**211**	< 20
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 2.92	---	< 1.9	< 2.96	< 3.02	---	< 2.98	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 2.92	---	< 1.9	< 2.96	< 3.02	---	< 2.98	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 2.92	---	< 1.9	< 2.96	< 3.02	---	< 2.98	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	---	---	**2.60**	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	< 10	< 1.8	< 1.8	**2.20**	< 1.8	< 2	---	---	**2.50**	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 2.92	---	< 1.9	< 2.96	< 3.02	---	< 2.98	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 5.84	---	< 1.9	< 5.92	< 6.04	---	< 5.97	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 5.84	---	< 1.9	< 5.92	< 6.04	---	< 5.97	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 5.84	---	< 1.9	< 5.92	< 6.04	---	< 5.97	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	< 10	< 1.8	< 1.8	< 1.8	< 1.8	< 2	< 5.84	---	< 1.9	< 5.92	< 6.04	---	< 5.97	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	MW-32	MW-35D	MW-35I									MW-35S	MW-36D	MW-37	MW-37D	MW-99I		
Sample ID			MW-032	MW-035D	MW-035I	MW-035I	MW-035I	MW-035I	MW-035I	MW-035I	MW-035I	MW-035I	MW-035I	MW-035S	MW-036D	MW-037	MW-037D	MW-099I	MW-099I	MW-099I
Sample Date			6/13/2024	6/13/2024	8/20/2014	5/3/2017	1/10/2019	10/30/2019	10/22/2020	11/2/2021	11/11/2022	11/1/2023	6/13/2024	6/13/2024	4/6/2015	4/26/2017	4/2/2015	4/6/2015	4/26/2017	10/29/2019
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**1.24 J**	**11.3**	< 10	**15.0**	< 7.4	< 7.1	< 6.7	< 6.7	**4.10**	< 2	**4.18**	**9.07**	**20.0**	**34.0**	**50.0**	**110**	**24.0**	**46.0**
Perfluorooctanoic acid (PFOA)	NS	40000000	**5.85**	**5.26**	< 20	**14.0**	< 3.3	< 7.4	< 5	< 5	**2.80**	< 2	**2.63**	**8.15**	< 20	**77.0**	**90.0**	**70.0**	**18.0**	**50.0**
Perfluorononanoic acid (PFNA)	NS	40000000	**1.25 J**	**5.01**	< 20	**8.00**	< 8.7	< 4.9	< 5.1	< 5.1	< 1.9	< 2	**1.52**	**2.72**	< 20	**8.60**	< 20	**120**	**24.0**	**58.0**
Perfluorodecanoic acid (PFDA)	NS	40000000	< 1.51	< 1.50	---	< 20	< 6.1	< 4.1	< 3.9	< 3.9	< 1.9	< 2	< 1.47	< 1.52	---	< 20	---	---	< 20	**5.50**
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**32.4**	**74.5**	**40.0**	**42.0**	< 5.6	**6.00**	**6.30**	**10.00**	**17.0**	**13.0**	**6.84**	**25.8**	**90.0**	**73.0**	**90.0**	**210**	**120**	**340**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**58.9**	**135**	**60.0**	**42.0**	< 6	< 5.2	**5.90**	< 5.7	**23.0**	**21.0**	**20.7**	**43.1**	**140**	**77.0**	**60.0**	**730**	**240**	**630**
PFAS SUM	20	NS	**99.6**	**231**	**100.0**	**121**	**ND**	**6.00**	**12.2**	**10.00**	**46.9**	**34.0**	**35.9**	**88.8**	**250**	**270**	**290**	**1240**	**426**	**1130**
Perfluorobutanoic Acid (PFBA)	NS	NS	< 6.03	**6.31**	---	**12.0**	< 5.5	< 7	< 3.9	< 3.9	**2.70**	< 2	< 5.87	**5.01 J**	---	**19.0**	---	---	**11.0**	**35.0**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**2.37 J**	**24.9**	---	**28.0**	< 7.5	< 4.1	< 6.7	< 6.7	**6.20**	**2.70**	**5.81**	**14.4**	---	**69.0**	---	---	**40.0**	**98.0**
Perfluorohexanoic acid (PFHxA)	NS	NS	**2.13**	**27.8**	---	**25.0**	< 3.5	< 6.4	< 5.3	< 5.3	**7.40**	**3.40**	**5.94**	**11.8**	---	**62.0**	---	---	**47.0**	**90.0**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 1.51	**1.26 J**	---	< 20	< 2.5	< 4.3	< 6.2	< 6.2	< 1.9	< 2	< 1.47	< 1.52	---	< 20	---	---	< 20	**4.70**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 1.51	< 1.50	---	< 20	< 5	< 6.8	< 8	< 8	< 1.9	< 2	< 1.47	< 1.52	---	< 20	---	---	< 20	< 6.8
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 1.51	< 1.50	---	< 20	< 3.8	< 6.9	< 6.4	< 6.4	< 1.9	< 2	< 1.47	< 1.52	---	< 20	---	---	< 20	< 6.9
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 1.51	< 1.50	---	< 20	< 2.7	< 6.7	< 6.8	< 6.8	< 1.9	< 2	< 1.47	< 1.52	---	< 20	---	---	< 20	< 6.7
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**1.07 J**	**6.56**	< 90	< 20	< 5.4	< 5.1	< 5.6	< 5.6	**2.00**	< 2	< 1.47	**1.74**	< 90	< 20	< 90	< 90	< 20	**12.0**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	**1.32 J**	**8.42**	---	---	---	---	---	---	**2.10**	< 2	< 1.47	**2.15**	---	---	---	---	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	< 1.51	**3.16**	---	< 20	---	< 3.3	< 6.5	< 6.5	< 1.9	< 2	< 1.47	**1.08 J**	---	< 20	---	---	< 20	**11.0**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	< 1.51	< 1.50	---	---	---	---	---	---	< 1.9	< 2	< 1.47	< 1.52	---	---	---	---	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 1.51	< 1.50	---	< 20	< 6	< 7.2	< 6.4	< 6.4	< 1.9	< 2	< 1.47	< 1.52	---	< 20	---	---	< 20	< 7.2
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 1.51	< 1.50	---	< 20	< 3.4	< 6.6	< 3.6	< 3.6	< 1.9	< 2	< 1.47	< 1.52	---	< 20	---	---	**11.0**	**11.0**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 15.1	< 15.0	---	< 20	< 12	< 6.6	< 7	< 7	---	---	< 14.7	< 15.2	---	< 20	---	---	< 20	< 6.6
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 15.1	< 15.0	---	< 20	< 7.9	< 9.4	< 7.1	< 7.1	---	---	< 14.7	< 15.2	---	< 20	---	---	< 20	< 9.4
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	< 1.51	< 1.50	---	---	---	---	---	---	< 1.9	< 2	< 1.47	< 1.52	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	< 1.51	< 1.50	---	---	---	---	---	---	< 1.9	< 2	< 1.47	< 1.52	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 1.51	< 1.50	---	< 20	< 10	< 9	< 7	< 7	---	---	< 1.47	< 1.52	---	< 20	---	---	< 20	< 9
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 1.51	< 1.50	---	< 20	< 13	< 3.5	< 7.8	< 7.8	---	---	< 1.47	< 1.52	---	< 20	---	---	< 20	< 3.5
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	< 6.03	< 6.01	---	---	---	---	---	---	< 1.9	< 2	< 5.87	< 6.09	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	< 6.03	< 6.01	---	< 20	< 6.6	< 5.9	< 6.5	< 6.5	**2.20**	< 2	< 5.87	< 6.09	---	< 20	---	---	< 20	**10.00**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 6.03	< 6.01	---	< 20	---	< 5.9	< 6.7	< 6.7	< 1.9	< 2	< 5.87	< 6.09	---	< 20	---	---	< 20	**54.0**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	< 3.01	< 3.00	---	---	---	---	---	---	< 1.9	< 2	< 2.94	< 3.04	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	< 3.01	< 3.00	---	---	---	---	---	---	< 1.9	< 2	< 2.94	< 3.04	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	< 3.01	< 3.00	---	---	---	---	---	---	< 1.9	< 2	< 2.94	< 3.04	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	---	---	< 1.9	< 2	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	---	---	< 1.9	< 2	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	< 3.01	< 3.00	---	---	---	---	---	---	< 1.9	< 2	< 2.94	< 3.04	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	< 6.03	< 6.01	---	---	---	---	---	---	< 1.9	< 2	< 5.87	< 6.09	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	< 6.03	< 6.01	---	---	---	---	---	---	< 1.9	< 2	< 5.87	< 6.09	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	< 6.03	< 6.01	---	---	---	---	---	---	< 1.9	< 2	< 5.87	< 6.09	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	< 6.03	< 6.01	---	---	---	---	---	---	< 1.9	< 2	< 5.87	< 6.09	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	MW-201			MW-215	MW-301	MW-302		MW-303		MW-304			MW-305		MW-306		MW-307D	
Sample ID			MW-201	MW-201	MW-201	MW-215	MW-301	MW-302	MW-302	MW-303	MW-303	MW-304	MW-304	MW-304	MW-305	MW-305	MW-306	MW-306	MW-307D	MW-307D
Sample Date			5/19/2021	11/9/2022	6/10/2024	5/19/2021	2/13/2023	2/13/2023	6/10/2024	2/13/2023	6/10/2024	2/13/2023	11/3/2023	6/10/2024	2/13/2023	6/11/2024	2/13/2023	6/10/2024	11/9/2022	6/13/2024
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**24.0**	< 1.9	**2.35**	**110**	< 10	< 10	**29.9**	< 10	**37.2**	**24.0**	**78.0**	**68.7**	**250**	**134**	< 10	**8.46**	< 1.9	< 1.54 U
Perfluorooctanoic acid (PFOA)	NS	40000000	**14.0**	< 1.9	**3.93**	**310**	< 10	**12.0**	**26.1**	< 10	**43.0**	**23.0**	**52.0**	**83.3**	**250**	**271**	< 10	**7.93**	< 1.9	< 1.54 U
Perfluorononanoic acid (PFNA)	NS	40000000	**19.0**	< 1.9	**2.47**	**31.0**	< 10	< 10	**12.0**	**13.0**	**78.4**	< 10	**10.00**	**10.8**	**95.0**	**154**	< 10	**5.22**	< 1.9	< 1.54
Perfluorodecanoic acid (PFDA)	NS	40000000	< 3.9	< 1.9	< 1.44	**11.0**	< 10	< 10	**0.738 J**	< 10	**3.58**	< 10	**2.40**	**2.74**	< 10	**8.81**	< 10	< 1.54	< 1.9	< 1.54
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**84.0**	**15.0**	**24.0**	**620**	< 10	**340**	**136**	**45.0**	**185**	**47.0**	**160**	**108**	**960**	**1240**	**33.0**	**42.8**	< 1.9	**0.830 J**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**230**	**18.0**	**71.3**	**1100**	< 10	**1400**	**633**	**200**	**446**	**70.0**	**88.0**	**77.4**	**1400**	**1420**	**62.0**	**191**	< 1.9	< 1.54
PFAS SUM	20	NS	**371**	**33.0**	**104**	**2182**	**ND**	**1752**	**838**	**258**	**793**	**164**	**390**	**351**	**2955**	**3228**	**95.0**	**255**	**ND**	**0.83**
Perfluorobutanoic Acid (PFBA)	NS	NS	**18.0**	< 1.9	**3.89 J**	**43.0**	< 10	< 10	**16.4**	< 10	**26.2**	< 10	**34.0**	**19.0**	**180**	**149**	< 10	**3.49 J**	< 1.9	< 6.15
Perfluoropentanoic Acid (PFPeA)	NS	NS	**52.0**	**2.00**	**5.26**	**130**	< 10	**10.00**	**53.9**	< 10	**65.7**	**23.0**	**72.0**	**46.1**	**720**	**490**	< 10	**6.89**	< 1.9	< 3.07
Perfluorohexanoic acid (PFHxA)	NS	NS	**37.0**	**2.00**	**3.93**	**160**	< 10	**17.0**	**51.9**	< 10	**58.5**	**17.0**	**56.0**	**44.0**	**450**	**370**	< 10	**8.02**	< 1.9	**0.507 JF**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 6.2	< 1.9	< 1.44	**34.0**	< 10	< 10	< 1.45	< 10	< 1.46	< 10	< 1.9	< 1.56	< 10	**2.03**	< 10	< 1.54	< 1.9	< 1.54
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 8	< 1.9	< 1.44	< 8	< 10	< 10	< 1.45	< 10	< 1.46	< 10	< 1.9	< 1.56	< 10	< 1.50	< 10	< 1.54	< 1.9	< 1.54
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 6.4	< 1.9	< 1.44	< 6.4	< 10	< 10	< 1.45	< 10	< 1.46	< 10	< 1.9	< 1.56	< 10	< 1.50	< 10	< 1.54	< 1.9	< 1.54
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 6.8	< 1.9	< 1.44	< 6.8	< 10	< 10	< 1.45	< 10	< 1.46	< 10	< 1.9	< 1.56	< 10	< 1.50	< 10	< 1.54	< 1.9	< 1.54
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 5.6	< 1.9	**3.65**	**12.0**	< 10	**16.0**	**6.82**	< 10	**11.3**	< 10	**5.90**	**3.11**	**40.0**	**45.8**	< 10	**2.77**	< 1.9	< 1.54
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	< 1.9	**3.34**	---	< 10	**22.0**	**13.1**	< 10	**24.2**	< 10	**9.00**	**5.02**	**88.0**	**92.2**	< 10	**2.99**	< 1.9	< 1.54
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	< 6.5	< 1.9	**0.765 J**	**19.0**	< 10	< 10	**3.18**	< 10	**7.64**	< 10	**3.10**	**2.11**	**43.0**	**49.0**	< 10	**1.97**	< 1.9	< 1.54
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	< 1.9	< 1.44	---	< 10	< 10	< 1.45	< 10	< 1.46	< 10	< 1.9	< 1.56	< 10	**1.21 J**	< 10	< 1.54	< 1.9	< 1.54
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 6.4	< 1.9	< 1.44	< 6.4	< 10	< 10	< 1.45	< 10	< 1.46	< 10	< 1.9	< 1.56	< 10	< 1.50	< 10	< 1.54	< 1.9	< 1.54
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 3.6	< 1.9	< 1.44	**500**	< 10	< 10	< 1.45	< 10	< 1.46	< 10	< 1.9	< 1.56	< 10	**1.72 F**	< 10	< 1.54	< 1.9	< 1.54
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 7	---	< 14.4	< 7	---	---	< 14.5	---	< 14.6	---	---	< 15.6	---	< 15.0	---	< 15.4	---	< 15.4
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 7.1	---	< 14.4	< 7.1	---	---	< 14.5	---	< 14.6	---	---	< 15.6	---	< 15.0	---	< 15.4	---	< 15.4
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	< 1.9	< 1.44	---	< 10	< 10	< 1.45	< 10	< 1.46	< 10	< 1.9	< 1.56	< 10	< 1.50	< 10	< 1.54	< 1.9	< 1.54
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	< 1.9	< 1.44	---	< 10	< 10	< 1.45	< 10	< 1.46	< 10	< 1.9	< 1.56	< 10	< 1.50	< 10	< 1.54	< 1.9	< 1.54
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 7	---	< 1.44	< 7	---	---	< 1.45	---	< 1.46	---	---	< 1.56	---	< 1.50	---	< 1.54	---	< 1.54
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 7.8	---	< 1.44	< 7.8	---	---	< 1.45	---	< 1.46	---	---	< 1.56	---	< 1.50	---	< 1.54	---	< 1.54
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	< 1.9	< 5.78	---	< 10	< 10	< 5.79	< 10	< 5.86	< 10	< 1.9	< 6.25	< 10	< 6.02	< 10	< 6.16	< 1.9	< 6.15
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	< 6.5	< 1.9	< 5.78	**42.0**	< 10	< 10	< 5.79	< 10	**10.6**	**16.0**	**53.0**	**51.8**	**70.0**	**30.5**	< 10	**4.59 J**	< 1.9	< 6.15
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 6.7	< 1.9	< 5.78	**59.0**	< 10	< 10	< 5.79	< 10	< 5.86	**20.0**	**50.0**	**38.6**	< 10	**3.33 J**	< 10	< 6.16	< 1.9	< 6.15
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	< 1.9	< 2.89	---	< 10	< 10	< 2.89	< 10	< 2.93	< 10	< 1.9	< 3.12	< 10	< 3.01	< 10	< 3.08	< 1.9	< 3.07
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	< 1.9	< 2.89	---	< 10	< 10	< 2.89	< 10	< 2.93	< 10	< 1.9	< 3.12	< 10	< 3.01	< 10	< 3.08	< 1.9	< 3.07
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	< 1.9	< 2.89	---	< 10	< 10	< 2.89	< 10	< 2.93	< 10	< 1.9	< 3.12	< 10	< 3.01	< 10	< 3.08	< 1.9	< 3.07
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	< 1.9	---	---	< 10	< 10	---	< 10	---	< 10	< 1.9	---	**78.0**	---	< 10	---	< 1.9	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	< 1.9	---	---	< 10	< 10	---	< 10	---	< 10	< 1.9	---	**280**	---	< 10	---	< 1.9	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	< 1.9	< 2.89	---	< 10	< 10	< 2.89	< 10	< 2.93	< 10	< 1.9	< 3.12	< 10	< 3.01	< 10	< 3.08	< 1.9	< 3.07
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	< 1.9	< 5.78	---	< 10	< 10	< 5.79	< 10	< 5.86	< 10	< 1.9	< 6.25	< 10	< 6.02	< 10	< 6.16	< 1.9	< 6.15
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	< 1.9	< 5.78	---	< 10	< 10	< 5.79	< 10	< 5.86	< 10	< 1.9	< 6.25	< 10	< 6.02	< 10	< 6.16	< 1.9	< 6.15
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	< 1.9	< 5.78	---	< 10	< 10	< 5.79	< 10	< 5.86	< 10	< 1.9	< 6.25	< 10	< 6.02	< 10	< 6.16	< 1.9	< 6.15
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	< 1.9	< 5.78	---	< 10	< 10	< 5.79	< 10	< 5.86	< 10	< 1.9	< 6.25	< 10	< 6.02	< 10	< 6.16	< 1.9	< 6.15

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	MW-307S		MW-308D		MW-308S		MW-309		MW-310		MW-311			MW-401D		MW-401S		MW-402D
Sample ID			MW-307S	MW-307S	MW-308D	MW-308D	MW-308S	MW-308S	MW-309	MW-309	MW-310	MW-310	MW-311	MW-311	MW-311	MW-401D	MW-401D	MW-401S	MW-401S	MW-402D
Sample Date			11/9/2022	6/13/2024	11/9/2022	6/13/2024	11/9/2022	6/13/2024	11/9/2022	6/13/2024	2/13/2023	6/10/2024	2/13/2023	11/2/2023	6/11/2024	7/26/2023	6/14/2024	7/26/2023	6/14/2024	7/26/2023
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	< 2	< 1.49 U	< 2	**0.306 J**	< 1.9	< 1.46 U	< 1.9	< 1.47 U	< 10	**2.82**	**170**	**300**	**211**	**4.40**	**5.11**	< 1.8	**0.573 J**	< 1.9
Perfluorooctanoic acid (PFOA)	NS	40000000	< 2	< 1.49 U	< 2	< 1.46 U	< 1.9	< 1.46 U	< 1.9	< 1.47 U	< 10	**7.74**	**160**	**470**	**198**	**7.10**	**10.2**	< 1.8	**0.920 J**	< 1.9
Perfluorononanoic acid (PFNA)	NS	40000000	< 2	< 1.49	< 2	< 1.46	< 1.9	< 1.46	< 1.9	< 1.47	< 10	**2.93**	**54.0**	**190**	**65.1**	**3.30**	**1.74**	< 1.8	< 1.45	< 1.9
Perfluorodecanoic acid (PFDA)	NS	40000000	< 2	< 1.49	< 2	< 1.46	< 1.9	< 1.46	< 1.9	< 1.47	< 10	< 1.57	< 10	**67.0**	**29.6**	< 1.8	**0.643 J**	< 1.8	< 1.45	< 1.9
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	< 2	**0.536 J**	< 2	**2.55**	< 1.9	**0.423 JF**	**4.60**	**9.53**	**48.0**	**30.9**	**840**	**1600**	**754**	**22.0**	**23.2**	< 1.8	**1.62**	**3.90**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**2.10**	**0.818 J**	**5.40**	**4.75**	**2.20**	< 1.46	**11.0**	**13.8**	**62.0**	**42.5**	**2400**	**5900**	**4240**	**9.10**	**7.69**	< 1.8	**3.70**	< 1.9
PFAS SUM	20	NS	**2.10**	**1.35**	**5.40**	**7.61**	**2.20**	**0.42**	**15.6**	**23.3**	**110**	**86.9**	**3624**	**8527**	**5498**	**45.9**	**48.6**	**ND**	**6.81**	**3.90**
Perfluorobutanoic Acid (PFBA)	NS	NS	< 2	< 5.95	< 2	< 5.84	< 1.9	< 5.83	< 1.9	< 5.87	< 10	**4.30 J**	**83.0**	**150**	**116**	**4.30**	**4.43 J**	< 1.8	< 5.80	< 1.9
Perfluoropentanoic Acid (PFPeA)	NS	NS	< 2	< 2.98	< 2	< 2.92	< 1.9	< 2.92	< 1.9	< 2.93	< 10	**5.96**	**230**	**560**	**415**	**6.50**	**8.20**	< 1.8	< 2.90	< 1.9
Perfluorohexanoic acid (PFHxA)	NS	NS	< 2	< 1.49	< 2	**0.452 JF**	< 1.9	< 1.46	< 1.9	< 1.47	< 10	**5.51**	**190**	**500**	**328**	**6.60**	**6.95**	< 1.8	**0.688 J**	< 1.9
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 2	< 1.49	< 2	< 1.46	< 1.9	< 1.46	< 1.9	< 1.47	< 10	< 1.57	**35.0**	**100.0**	**53.9**	< 1.8	< 1.48	< 1.8	< 1.45	< 1.9
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 2	< 1.49	< 2	< 1.46	< 1.9	< 1.46	< 1.9	< 1.47	< 10	< 1.57	< 10	< 1.9	< 1.50	< 1.8	< 1.48	< 1.8	< 1.45	< 1.9
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 2	< 1.49	< 2	< 1.46	< 1.9	< 1.46	< 1.9	< 1.47	< 10	< 1.57	< 10	< 1.9	< 1.50	< 1.8	< 1.48	< 1.8	< 1.45	< 1.9
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 2	< 1.49	< 2	< 1.46	< 1.9	< 1.46	< 1.9	< 1.47	< 10	< 1.57	< 10	< 1.9	< 1.50	< 1.8	< 1.48	< 1.8	< 1.45	< 1.9
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 2	< 1.49	< 2	**0.679 J**	< 1.9	< 1.46	< 1.9	**0.982 J**	< 10	**3.06**	**33.0**	**100.0**	**41.2**	< 1.8	**1.45 J**	< 1.8	< 1.45	< 1.9
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	< 2	< 1.49	< 2	**0.299 J**	< 1.9	< 1.46	< 1.9	**0.931 J**	< 10	**2.24**	**51.0**	**120**	**82.4**	< 1.8	**0.761 J**	< 1.8	< 1.45	< 1.9
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	< 2	< 1.49	< 2	< 1.46	< 1.9	< 1.46	< 1.9	**0.990 J**	< 10	**0.690 J**	**41.0**	**350**	**47.1**	< 1.8	**0.599 J**	< 1.8	< 1.45	< 1.9
Perfluorononanesulfonic Acid (PFNS)	NS	NS	< 2	< 1.49	< 2	< 1.46	< 1.9	< 1.46	< 1.9	< 1.47	< 10	< 1.57	**15.0**	**80.0**	**8.50**	< 1.8	< 1.48	< 1.8	< 1.45	< 1.9
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 2	< 1.49	< 2	< 1.46	< 1.9	< 1.46	< 1.9	< 1.47	< 10	< 1.57	< 10	**14.0**	**0.689 J**	< 1.8	< 1.48	< 1.8	< 1.45	< 1.9
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 2	< 1.49	< 2	< 1.46	< 1.9	< 1.46	< 1.9	< 1.47	< 10	< 1.57	< 10	**18.0**	**15.8**	< 1.8	< 1.48	< 1.8	< 1.45	< 1.9
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	---	< 14.9	---	< 14.6	---	< 14.6	---	< 14.7	---	< 15.7	---	---	< 15.0	---	< 14.8	---	< 14.5	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	---	< 14.9	---	< 14.6	---	< 14.6	---	< 14.7	---	< 15.7	---	---	< 15.0	---	< 14.8	---	< 14.5	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	< 2	< 1.49	< 2	< 1.46	< 1.9	< 1.46	< 1.9	< 1.47	< 10	< 1.57	< 10	< 1.9	< 1.50	< 1.8	< 1.48	< 1.8	< 1.45	< 1.9
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	< 2	< 1.49	< 2	< 1.46	< 1.9	< 1.46	< 1.9	< 1.47	< 10	< 1.57	< 10	< 1.9	< 1.50	< 1.8	< 1.48	< 1.8	< 1.45	< 1.9
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	---	< 1.49	---	< 1.46	---	< 1.46	---	< 1.47	---	< 1.57	---	---	< 1.50	---	< 1.48	---	< 1.45	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	---	< 1.49	---	< 1.46	---	< 1.46	---	< 1.47	---	< 1.57	---	---	< 1.50	---	< 1.48	---	< 1.45	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	< 2	< 5.95	< 2	< 5.84	< 1.9	< 5.83	< 1.9	< 5.87	< 10	< 6.27	< 10	**4.30**	< 5.99	< 1.8	< 5.91	< 1.8	< 5.80	< 1.9
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	< 2	< 5.95	< 2	< 5.84	**27.0**	< 5.83	< 1.9	< 5.87	< 10	< 6.27	**180**	**1200**	**337**	< 1.8	< 5.91	< 1.8	< 5.80	< 1.9
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 2	< 5.95	< 2	< 5.84	< 1.9	< 5.83	< 1.9	< 5.87	< 10	< 6.27	**170**	**1100**	**425**	< 1.8	< 5.91	< 1.8	< 5.80	< 1.9
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	< 2	< 2.98	< 2	< 2.92	< 1.9	< 2.92	< 1.9	< 2.93	< 10	< 3.14	< 10	< 1.9	< 3.00	< 1.8	< 2.96	< 1.8	< 2.90	< 1.9
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	< 2	< 2.98	< 2	< 2.92	< 1.9	< 2.92	< 1.9	< 2.93	< 10	< 3.14	< 10	< 1.9	< 3.00	< 1.8	< 2.96	< 1.8	< 2.90	< 1.9
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	< 2	< 2.98	< 2	< 2.92	< 1.9	< 2.92	< 1.9	< 2.93	< 10	< 3.14	< 10	< 1.9	< 3.00	< 1.8	< 2.96	< 1.8	< 2.90	< 1.9
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	< 2	---	< 2	---	< 1.9	---	< 1.9	---	< 10	---	**32.0**	**140**	---	< 1.8	---	< 1.8	---	< 1.9
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	< 2	---	< 2	---	< 1.9	---	< 1.9	---	< 10	---	**380**	**890**	---	< 1.8	---	< 1.8	---	< 1.9
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	< 2	< 2.98	< 2	< 2.92	< 1.9	< 2.92	< 1.9	< 2.93	< 10	< 3.14	< 10	< 1.9	< 3.00	< 1.8	< 2.96	< 1.8	< 2.90	< 1.9
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	< 2	< 5.95	< 2	< 5.84	< 1.9	< 5.83	< 1.9	< 5.87	< 10	< 6.27	< 10	< 1.9	< 5.99	< 1.8	< 5.91	< 1.8	< 5.80	< 1.9
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	< 2	< 5.95	< 2	< 5.84	< 1.9	< 5.83	< 1.9	< 5.87	< 10	< 6.27	< 10	< 1.9	< 5.99	< 1.8	< 5.91	< 1.8	< 5.80	< 1.9
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	< 2	< 5.95	< 2	< 5.84	< 1.9	< 5.83	< 1.9	< 5.87	< 10	< 6.27	< 10	< 1.9	< 5.99	< 1.8	< 5.91	< 1.8	< 5.80	< 1.9
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	< 2	< 5.95	< 2	< 5.84	< 1.9	< 5.83	< 1.9	< 5.87	< 10	< 6.27	< 10	< 1.9	< 5.99	< 1.8	< 5.91	< 1.8	< 5.80	< 1.9

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	MW-402D	MW-402S	MW-402S	MW-403D	MW-403D	MW-403S	MW-403S	MW-404D	MW-404D	MW-404S	MW-404S	MW-405	MW-406	MW-407D	MW-407S	MW-408D	MW-408S	OW-2D
Sample ID			MW-402D	MW-402S	MW-402S	MW-403D	MW-403D	MW-403S	MW-403S	MW-404D	MW-404D	MW-404S	MW-404S	MW-405	MW-406	MW-407D	MW-407S	MW-408D	MW-408S	OW-02D
Sample Date			6/11/2024	7/26/2023	6/11/2024	7/26/2023	6/11/2024	7/26/2023	6/11/2024	11/2/2023	6/13/2024	11/2/2023	6/13/2024	6/10/2024	6/11/2024	6/13/2024	6/13/2024	6/14/2024	6/14/2024	4/14/2016
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	< 1.54 U	< 4.1	< 1.60 U	**3.90**	**5.96**	**57.0**	**15.3**	**11.0**	**5.98**	< 2	**1.52 J**	**8.99**	**3.86**	< 1.56 U	< 1.55 U	**2.94**	< 1.50 U	< 20
Perfluorooctanoic acid (PFOA)	NS	40000000	< 1.54 U	< 4.1	< 1.60 U	**8.60**	**13.2**	**49.0**	**18.3**	**16.0**	**8.61**	< 2	**3.63**	**22.2**	**1.71**	< 1.56 U	**0.974 J**	**7.30**	< 1.50 U	< 20
Perfluorononanoic acid (PFNA)	NS	40000000	< 1.54	< 4.1	< 1.60	< 1.9	**2.47**	**12.0**	**4.65**	**3.80**	**2.05**	< 2	< 1.63	**4.42**	**0.807 J**	< 1.56	< 1.55	**1.27 J**	< 1.50	< 20
Perfluorodecanoic acid (PFDA)	NS	40000000	< 1.54	< 4.1	< 1.60	< 1.9	< 1.57	< 1.8	< 1.58	**2.50**	**1.77**	< 2	< 1.63	**1.49**	< 1.48	< 1.56	< 1.55	**1.75**	< 1.50	< 20
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**2.87**	< 4.1	< 1.60	**13.0**	**24.2**	**14.0**	**3.82**	**89.0**	**39.2**	**21.0**	**73.0**	**12.0**	**9.85**	< 1.56	< 1.55	**19.6**	**0.713 J**	< 20
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**1.13 J**	< 4.1	< 1.60	**20.0**	**18.9**	**9.40**	**11.0**	**220**	**131**	< 2	**1.46 J**	**33.0**	**7.66**	< 1.56	**0.735 J**	**57.8**	**1.56**	**6.00**
PFAS SUM	20	NS	**4.00**	**ND**	**ND**	**45.5**	**64.7**	**141**	**53.1**	**342**	**189**	**21.0**	**79.6**	**82.1**	**23.9**	**ND**	**1.71**	**90.7**	**2.27**	**6.00**
Perfluorobutanoic Acid (PFBA)	NS	NS	**1.93 J**	< 4.1	**1.46 J**	**7.00**	**8.20**	**55.0**	**12.9**	**11.0**	**6.13 J**	< 2	**1.29 J**	**8.82**	**1.43 J**	< 6.26	< 6.19	**3.21 J**	< 6.01	< 20
Perfluoropentanoic Acid (PFPeA)	NS	NS	< 3.07	< 4.1	< 3.21	**5.60**	**10.4**	**140**	**29.4**	**30.0**	**15.4**	< 2	**1.50 J**	**22.4**	**1.50 J**	< 3.13	< 3.09	**6.04**	< 3.00	< 20
Perfluorohexanoic acid (PFHxA)	NS	NS	< 1.54	< 4.1	< 1.60	**8.50**	**12.5**	**85.0**	**17.2**	**23.0**	**12.5**	< 2	**6.45**	**16.0**	**2.52**	< 1.56	< 1.55	**6.86**	< 1.50	< 20
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 1.54	< 4.1	< 1.60	< 1.9	< 1.57	< 1.8	< 1.58	< 2	< 1.64	< 2	< 1.63	< 1.48	< 1.48	< 1.56	< 1.55	< 1.52	< 1.50	< 20
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 1.54	< 4.1	< 1.60	< 1.9	< 1.57	< 1.8	< 1.58	< 2	< 1.64	< 2	< 1.63	< 1.48	< 1.48	< 1.56	< 1.55	< 1.52	< 1.50	< 20
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 1.54	< 4.1	< 1.60	< 1.9	< 1.57	< 1.8	< 1.58	< 2	< 1.64	< 2	< 1.63	< 1.48	< 1.48	< 1.56	< 1.55	< 1.52	< 1.50	< 20
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 1.54	< 4.1	< 1.60	< 1.9	< 1.57	< 1.8	< 1.58	< 2	< 1.64	< 2	< 1.63	< 1.48	< 1.48	< 1.56	< 1.55	< 1.52	< 1.50	< 20
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 1.54	< 4.1	< 1.60	**3.00**	**2.10**	< 1.8	< 1.58	< 2	**1.32 J**	< 2	**2.33**	**3.76**	**1.10 J**	< 1.56	< 1.55	**1.46 J**	< 1.50	< 20
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	< 1.54	< 4.1	< 1.60	< 1.9	**1.10 J**	< 1.8	**0.301 J**	**3.70**	**2.09**	< 2	**3.97**	**2.78**	**1.35 J**	< 1.56	< 1.55	**1.43 J**	< 1.50	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	< 1.54	< 4.1	< 1.60	< 1.9	< 1.57	< 1.8	< 1.58	**3.20**	**1.19 J**	< 2	< 1.63	**0.975 J**	< 1.48	< 1.56	< 1.55	< 1.52	< 1.50	< 20
Perfluorononanesulfonic Acid (PFNS)	NS	NS	< 1.54	< 4.1	< 1.60	< 1.9	< 1.57	< 1.8	< 1.58	< 2	< 1.64	< 2	< 1.63	< 1.48	< 1.48	< 1.56	< 1.55	< 1.52	< 1.50	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 1.54	< 4.1	< 1.60	< 1.9	< 1.57	< 1.8	< 1.58	< 2	< 1.64	< 2	< 1.63	< 1.48	< 1.48	< 1.56	< 1.55	< 1.52	< 1.50	< 20
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 1.54	< 4.1	< 1.60	< 1.9	< 1.57	< 1.8	< 1.58	< 2	< 1.64	< 2	< 1.63	< 1.48	< 1.48	< 1.56	< 1.55	< 1.52	< 1.50	< 20
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 15.4	---	< 16.0	---	< 15.7	---	< 15.8	---	< 16.4	---	< 16.3	< 14.8	< 14.8	< 15.6	< 15.5	< 15.2	< 15.0	< 20
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 15.4	---	< 16.0	---	< 15.7	---	< 15.8	---	< 16.4	---	< 16.3	< 14.8	< 14.8	< 15.6	< 15.5	< 15.2	< 15.0	< 20
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	< 1.54	< 4.1	< 1.60	< 1.9	< 1.57	< 1.8	< 1.58	< 2	< 1.64	< 2	< 1.63	< 1.48	< 1.48	< 1.56	< 1.55	< 1.52	< 1.50	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	< 1.54	< 4.1	< 1.60	< 1.9	< 1.57	< 1.8	< 1.58	< 2	< 1.64	< 2	< 1.63	< 1.48	< 1.48	< 1.56	< 1.55	< 1.52	< 1.50	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 1.54	---	< 1.60	---	< 1.57	---	< 1.58	---	< 1.64	---	< 1.63	< 1.48	< 1.48	< 1.56	< 1.55	< 1.52	< 1.50	< 20
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 1.54	---	< 1.60	---	< 1.57	---	< 1.58	---	< 1.64	---	< 1.63	< 1.48	< 1.48	< 1.56	< 1.55	< 1.52	< 1.50	< 20
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	< 6.14	< 4.1	< 6.41	< 1.9	< 6.29	< 1.8	< 6.34	< 2	< 6.57	< 2	< 6.51	< 5.91	< 5.92	< 6.26	< 6.19	< 6.07	< 6.01	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	< 6.14	< 4.1	< 6.41	< 1.9	< 6.29	**190**	**22.6**	< 2	**5.76 J**	< 2	< 6.51	**15.2**	**15.7**	**6.16 J**	< 6.19	< 6.07	< 6.01	**9.20**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 6.14	< 4.1	< 6.41	< 1.9	< 6.29	< 1.8	< 6.34	< 2	< 6.57	< 2	< 6.51	< 5.91	< 5.92	< 6.26	< 6.19	< 6.07	< 6.01	< 20
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	< 3.07	< 4.1	< 3.21	< 1.9	< 3.14	< 1.8	< 3.17	< 2	< 3.28	< 2	< 3.25	< 2.95	< 2.96	< 3.13	< 3.09	< 3.03	< 3.00	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	< 3.07	< 4.1	< 3.21	< 1.9	< 3.14	< 1.8	< 3.17	< 2	< 3.28	< 2	< 3.25	< 2.95	< 2.96	< 3.13	< 3.09	< 3.03	< 3.00	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	< 3.07	< 4.1	< 3.21	< 1.9	< 3.14	< 1.8	< 3.17	< 2	< 3.28	< 2	< 3.25	< 2.95	< 2.96	< 3.13	< 3.09	< 3.03	< 3.00	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	< 4.1	---	< 1.9	---	< 1.8	---	< 2	---	< 2	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	< 4.1	---	< 1.9	---	< 1.8	---	**2.30**	---	< 2	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	< 3.07	< 4.1	< 3.21	< 1.9	< 3.14	< 1.8	< 3.17	< 2	< 3.28	< 2	< 3.25	< 2.95	< 2.96	< 3.13	< 3.09	< 3.03	< 3.00	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	< 6.14	< 4.1	< 6.41	< 1.9	< 6.29	< 1.8	< 6.34	< 2	< 6.57	< 2	< 6.51	< 5.91	< 5.92	< 6.26	< 6.19	< 6.07	< 6.01	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	< 6.14	< 4.1	< 6.41	< 1.9	< 6.29	< 1.8	< 6.34	< 2	< 6.57	< 2	< 6.51	< 5.91	< 5.92	< 6.26	< 6.19	< 6.07	< 6.01	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	< 6.14	< 4.1	< 6.41	< 1.9	< 6.29	< 1.8	< 6.34	< 2	< 6.57	< 2	< 6.51	< 5.91	< 5.92	< 6.26	< 6.19	< 6.07	< 6.01	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	< 6.14	< 4.1	< 6.41	< 1.9	< 6.29	< 1.8	< 6.34	< 2	< 6.57	< 2	< 6.51	< 5.91	< 5.92	< 6.26	< 6.19	< 6.07	< 6.01	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	OW-2D	OW-2S		OW-8A														
Sample ID			OW-02D	OW-02S	OW-02S	OW-08A	OW-08A	OW-08A	OW-08A	OW-08A	OW-08A	OW-08A	OW-08A	OW-08A	OW-08A	OW-08A	OW-08A	OW-08A	OW-08A	OW-08A
Sample Date			6/10/2024	4/14/2016	6/10/2024	11/22/2012	6/3/2014	4/11/2017	8/16/2017	6/26/2018	1/9/2019	4/23/2019	7/22/2019	10/28/2019	2/18/2020	5/11/2020	7/28/2020	10/20/2020	1/26/2021	5/19/2021
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**2.36**	**480**	**71.5**	---	**420**	**580**	**77.0**	**43.0**	**210**	**40.0**	**26.0**	**190**	**35.0**	**8.90**	**7.40**	< 6.7	**150**	**66.0**
Perfluorooctanoic acid (PFOA)	NS	40000000	**5.11**	**250**	**411**	**430**	**1000**	**2000**	**120**	**65.0**	**420**	**66.0**	**55.0**	**130**	**62.0**	**18.0**	**12.0**	< 5	**290**	**120**
Perfluorononanoic acid (PFNA)	NS	40000000	**1.66**	**130**	**22.8**	---	**560**	**350**	**75.0**	**310**	**150**	**120**	**78.0**	**10.00**	**110**	**12.0**	**11.0**	< 5.1	**120**	**25.0**
Perfluorodecanoic acid (PFDA)	NS	40000000	**2.34**	**9.80**	**3.61**	---	---	**25.0**	**12.0**	**29.0**	**16.0**	**15.0**	**18.0**	**14.0**	**17.0**	**3.60**	**10.00**	< 3.9	< 0.64	< 3.9
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**1.33 J**	**2600**	**1610**	---	**2900**	**4400**	**410**	**250**	**890**	**140**	**100.0**	**750**	**190**	**77.0**	**30.0**	**11.0**	**760**	**330**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**4.20**	**2400**	**725**	**2700**	**8600**	**1700**	**770**	**2800**	**990**	**880**	**780**	**220**	**650**	**150**	**170**	**40.0**	**230**	**120**
PFAS SUM	20	NS	**17.0**	**5870**	**2844**	**3130**	**13480**	**9055**	**1464**	**3497**	**2676**	**1261**	**1057**	**1314**	**1064**	**270**	**240**	**51.0**	**1550**	**661**
Perfluorobutanoic Acid (PFBA)	NS	NS	**1.29 J**	**250**	**45.2**	---	---	**240**	**34.0**	**31.0**	**65.0**	**16.0**	**9.10**	**65.0**	**8.20**	**3.90**	< 7	< 3.9	**68.0**	**27.0**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**3.22**	**1100**	**135**	---	---	**730**	**130**	**70.0**	**220**	**41.0**	**35.0**	**200**	**36.0**	**8.20**	**7.60**	< 6.7	**200**	**77.0**
Perfluorohexanoic acid (PFHxA)	NS	NS	**1.39 J**	**1000**	**130**	---	---	**770**	**130**	**50.0**	**310**	**35.0**	**33.0**	**330**	**34.0**	**8.00**	**7.60**	**6.70**	**270**	**110**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**0.767 J**	**28.0**	**9.20**	---	---	**78.0**	**93.0**	**86.0**	**63.0**	**88.0**	**91.0**	**38.0**	**61.0**	**30.0**	**31.0**	**9.80**	**12.0**	< 6.2
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 1.46	< 20	< 1.48	---	---	< 20	< 19	< 5	< 5	< 6.8	< 6.8	< 6.8	< 6.8	**0.38**	< 6.8	< 8	< 0.59	< 8
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 1.46	< 20	< 1.48	---	---	< 20	< 19	< 3.8	< 3.8	< 6.9	< 6.9	< 6.9	< 6.9	< 0.3	< 6.9	< 6.4	< 0.48	< 6.4
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 1.46	< 20	< 1.48	---	---	< 20	< 19	< 2.7	< 2.7	< 6.7	< 6.7	< 6.7	< 6.7	< 0.16	< 6.7	< 6.8	< 0.37	< 6.8
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 1.46	**80.0**	**20.2**	---	< 90	**80.0**	**16.0**	**8.00**	**17.0**	< 5.1	< 5.1	**36.0**	< 5.1	< 0.37	< 5.1	< 5.6	**24.0**	**6.00**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	< 1.46	---	**42.2**	---	---	---	---	---	---	---	---	---	---	**0.85**	---	---	**43.0**	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	< 1.46	**59.0**	**23.0**	---	---	**120**	**15.0**	---	---	**9.60**	< 3.3	< 3.3	**5.50**	**2.80**	< 3.3	< 6.5	**14.0**	< 6.5
Perfluorononanesulfonic Acid (PFNS)	NS	NS	< 1.46	---	**0.709 J**	---	---	---	---	---	---	---	---	---	---	< 0.55	---	---	< 0.64	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 1.46	< 20	< 1.48	---	---	< 20	< 19	< 6	< 6	< 7.2	< 7.2	< 7.2	< 7.2	< 0.36	< 7.2	< 6.4	< 0.53	< 6.4
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	**1.06 J**	**6.70**	**345**	---	---	**73.0**	**29.0**	**39.0**	**31.0**	**13.0**	< 6.6	< 6.6	< 6.6	**7.40**	< 6.6	< 3.6	**1.90**	< 3.6
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 14.6	< 20	< 14.8	---	---	< 20	< 19	< 12	< 12	< 6.6	< 6.6	< 6.6	< 6.6	---	< 6.6	< 7	---	< 7
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 14.6	< 20	< 14.8	---	---	< 20	< 19	< 7.9	< 7.9	< 9.4	< 9.4	< 9.4	< 9.4	---	< 9.4	< 7.1	---	< 7.1
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	< 1.46	---	< 1.48	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	< 1.46	---	< 1.48	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 1.46	< 20	< 1.48	---	---	< 20	< 19	< 10	< 10	< 9	< 9	< 9	< 9	---	< 9	< 7	---	< 7
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 1.46	< 20	**3.04**	---	---	< 20	< 19	< 13	< 13	< 3.5	< 3.5	< 3.5	< 3.5	---	< 3.5	< 7.8	---	< 7.8
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	< 5.84	---	< 5.91	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**3.61 J**	**150**	**6.63**	---	---	**140**	**87.0**	**69.0**	**50.0**	**34.0**	**63.0**	< 5.9	**6.10**	**3.80**	< 5.9	< 6.5	**20.0**	**13.0**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**10.9**	**17.0**	**2.76 J**	---	---	**330**	**48.0**	---	---	**81.0**	**55.0**	< 5.9	**38.0**	**3.60**	< 5.9	< 6.7	**0.86**	< 6.7
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	< 2.92	---	< 2.96	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	< 2.92	---	< 2.96	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	< 2.92	---	< 2.96	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	< 2.92	---	< 2.96	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	< 5.84	---	< 5.91	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	< 5.84	---	< 5.91	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	< 5.84	---	< 5.91	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	< 5.84	---	< 5.91	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	OW-8A										OW-8D	PC-0		PC-01				
Sample ID			OW-08A	OW-08A	OW-08A	OW-08A	OW-08A	OW-08A	OW-08A	OW-08A	OW-08A	OW-08A		PC-00	PC-00	PC-01	PC-01	PC-01	PC-01	PC-01
Sample Date			7/28/2021	11/3/2021	1/25/2022	4/21/2022	7/27/2022	11/9/2022	1/31/2023	4/4/2023	7/25/2023	6/10/2024	6/10/2024	4/2/2015	4/24/2017	8/20/2014	6/17/2015	10/7/2015	3/30/2016	4/24/2017
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	< 6.7	**360**	**12.0**	**130**	**12.0**	**10.00**	**180**	**140**	**9.90**	**158**	**26.8**	**20.0**	**90.0**	**130**	**450**	**350**	**1000**	**300**
Perfluorooctanoic acid (PFOA)	NS	40000000	**6.70**	**720**	**11.0**	**260**	**16.0**	**13.0**	**410**	**210**	**11.0**	**451**	**40.9**	< 20	**58.0**	**120**	**1100**	**270**	**1200**	**360**
Perfluorononanoic acid (PFNA)	NS	40000000	< 5.1	**70.0**	< 5.1	**100.0**	**20.0**	< 1.9	**48.0**	**25.0**	**2.50**	**65.2**	**7.45**	< 20	**48.0**	**40.0**	**560**	< 800	**410**	**420**
Perfluorodecanoic acid (PFDA)	NS	40000000	< 3.9	< 3.9	< 3.9	**15.0**	< 3.9	< 1.9	< 10	**4.60**	**2.10**	**11.4**	**< 1.47**	---	**5.30**	---	< 800	< 800	< 800	**20.0**
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**23.0**	**3100**	**39.0**	**620**	**45.0**	**70.0**	**2000**	**660**	**42.0**	**1110**	**151**	< 30	**310**	**360**	**10000**	**1700**	**5400**	**2000**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**11.0**	**520**	**120**	**1200**	**130**	**76.0**	**480**	**680**	**130**	**1050**	**142**	**110**	**930**	**320**	**48000**	**12000**	**56000**	**5700**
PFAS SUM	20	NS	**40.7**	**4770**	**182**	**2325**	**223**	**169**	**3118**	**1720**	**198**	**2846**	**368**	**130**	**1441**	**970**	**60110**	**14320**	**64010**	**8800**
Perfluorobutanoic Acid (PFBA)	NS	NS	< 3.9	**96.0**	**4.80**	**51.0**	**7.30**	**6.50**	**63.0**	**65.0**	**45.0**	**53.9**	**12.7**	---	**54.0**	---	**460**	**240**	**330**	**130**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**7.90**	**290**	**21.0**	**160**	**25.0**	**18.0**	**240**	**210**	**22.0**	**185**	**47.4**	---	**160**	---	**1200**	**620**	**1500**	**540**
Perfluorohexanoic acid (PFHxA)	NS	NS	**8.40**	**480**	**18.0**	**180**	**13.0**	**21.0**	**580**	**300**	**20.0**	**214**	**42.2**	---	**220**	---	**2800**	**660**	**1600**	**640**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 6.2	< 6.2	< 6.2	**25.0**	**7.40**	< 1.9	**11.0**	**21.0**	**15.0**	**59.3**	**1.86**	---	**8.00**	---	**820**	**430**	**990**	**160**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 8	< 8	< 8	< 5.9	< 8	< 1.9	< 10	< 4.2	< 1.8	< 1.54	< 1.47	---	< 20	---	< 800	< 800	< 800	< 40
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 6.4	< 6.4	< 6.4	< 4.8	< 6.4	< 1.9	< 10	< 4.2	< 1.8	< 1.54	< 1.47	---	< 20	---	< 800	< 800	< 800	< 40
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 6.8	< 6.8	< 6.8	< 3.7	< 6.8	< 1.9	< 10	< 4.2	< 1.8	< 1.54	< 1.47	---	< 20	---	**280**	< 800	< 800	< 40
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 5.6	**67.0**	< 5.6	**20.0**	< 5.6	**3.40**	**87.0**	**36.0**	**3.40**	**28.2**	**6.96**	< 90	**41.0**	< 90	**1100**	< 800	< 800	**86.0**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	---	**26.0**	---	**3.90**	**94.0**	**36.0**	**3.00**	**42.0**	**9.80**	---	---	---	---	---	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	< 6.5	**27.0**	< 6.5	**13.0**	< 6.5	< 1.9	**34.0**	**14.0**	< 1.8	**22.6**	**2.83**	---	**28.0**	---	**1300**	**430**	**660**	**140**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	---	< 6.4	---	< 1.9	< 10	**5.00**	< 1.8	**1.57**	**< 1.47**	---	---	---	---	---	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 6.4	< 6.4	< 6.4	< 5.3	< 6.4	< 1.9	< 10	< 4.2	< 1.8	< 1.54	< 1.47	---	< 20	---	< 800	< 800	< 800	< 40
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 3.6	< 3.6	< 3.6	< 8.1	< 3.6	**3.00**	< 10	**20.0**	**30.0**	**21.9 F**	**1.67**	---	< 20	---	< 800	< 800	< 800	**18.0**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 7	< 7	< 7	---	< 7	---	---	---	---	< 15.4	< 14.7	---	< 20	---	< 2000	< 800	< 800	< 40
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 7.1	< 7.1	< 7.1	---	< 7.1	---	---	---	---	< 15.4	< 14.7	---	< 20	---	< 2000	< 800	< 800	< 40
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8	< 1.54	< 1.47	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8	< 1.54	< 1.47	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	---	< 7	< 7	---	< 7	---	---	---	---	< 1.54	< 1.47	---	< 20	---	< 2000	< 800	< 800	< 40
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	---	< 7.8	< 7.8	---	< 7.8	---	---	---	---	< 1.54	< 1.47	---	< 20	---	< 2000	< 800	< 800	< 40
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8	< 6.15	< 5.89	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	< 6.5	< 6.5	**11.0**	**28.0**	**13.0**	**2.30**	**15.0**	**12.0**	< 1.8	**32.3**	**5.17 J**	---	**29.0**	---	**7900**	**1900**	**7800**	**2200**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 6.7	< 6.7	< 6.7	**8.50**	**7.50**	< 1.9	< 10	**71.0**	**1.90**	**8.86**	**< 5.89**	---	< 20	---	**740**	**900**	**3900**	**320**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8	< 3.07	< 2.94	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8	< 3.07	< 2.94	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8	< 3.07	< 2.94	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	**3.30**	**12.0**	**11.0**	**3.30**	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	**15.0**	**21.0**	**47.0**	**10.00**	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8	< 3.07	< 2.94	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8	< 6.15	< 5.89	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8	< 6.15	< 5.89	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8	< 6.15	< 5.89	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8	< 6.15	< 5.89	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
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5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	PC-01																	
Sample ID			PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	PC-01
Sample Date			2/6/2018	6/26/2018	1/11/2019	4/24/2019	7/23/2019	10/29/2019	2/19/2020	5/12/2020	7/29/2020	10/22/2020	10/22/2020	1/27/2021	5/20/2021	11/1/2021	1/26/2022	4/20/2022	7/28/2022	11/10/2022
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**310**	**200**	**200**	**180**	**230**	**150**	**240**	**150**	**98.0**	**200**	**190**	**76.0**	**83.0**	**100.0**	**95.0**	**110**	**78.0**	**550**
Perfluorooctanoic acid (PFOA)	NS	40000000	**370**	**190**	**140**	**300**	**150**	**72.0**	**180**	**110**	**63.0**	**110**	**110**	**59.0**	**49.0**	**48.0**	**66.0**	**76.0**	**53.0**	**230**
Perfluorononanoic acid (PFNA)	NS	40000000	**190**	**140**	**62.0**	**150**	**140**	**75.0**	**70.0**	**110**	**58.0**	**99.0**	**100.0**	**52.0**	**72.0**	**33.0**	**31.0**	**30.0**	**44.0**	**61.0**
Perfluorodecanoic acid (PFDA)	NS	40000000	**39.0**	**45.0**	**9.20**	**78.0**	**67.0**	**19.0**	**20.0**	**28.0**	**36.0**	**28.0**	**27.0**	**26.0**	**15.0**	< 3.9	**7.50**	**6.70**	**9.40**	**23.0**
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**1700**	**850**	**380**	**650**	**430**	**380**	**450**	**400**	**240**	**340**	**350**	**190**	**230**	**170**	**180**	**270**	**240**	**960**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**9000**	**10000**	**1700**	**8000**	**4300**	**1600**	**1700**	**1700**	**1900**	**1300**	**1200**	**1500**	**1500**	**440**	**630**	**660**	**940**	**850**
PFAS SUM	20	NS	**11609**	**11425**	**2491**	**9358**	**5317**	**2296**	**2660**	**2498**	**2395**	**2077**	**1977**	**1903**	**1949**	**791**	**1010**	**1153**	**1364**	**2674**
Perfluorobutanoic Acid (PFBA)	NS	NS	**190**	**130**	**96.0**	**78.0**	**160**	**66.0**	**93.0**	**63.0**	**40.0**	**72.0**	**70.0**	**41.0**	**32.0**	**51.0**	**46.0**	**62.0**	**38.0**	**230**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**650**	**440**	**280**	**250**	**630**	**220**	**330**	**200**	**150**	**250**	**260**	**130**	**91.0**	**210**	**200**	**230**	**130**	**710**
Perfluorohexanoic acid (PFHxA)	NS	NS	**890**	**440**	**250**	**220**	**590**	**190**	**260**	**190**	**140**	**170**	**180**	**140**	**100.0**	**180**	**160**	**250**	**110**	**610**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**250**	**260**	**190**	**180**	**350**	**450**	**270**	**130**	**190**	**420**	**430**	**410**	**350**	**230**	**200**	**230**	**170**	**160**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 40	< 10	< 5	< 14	< 6.8	< 6.8	< 6.8	< 2.5	< 6.8	< 8	< 8	< 5.9	< 8	< 8	< 8	**0.64**	< 8	**3.40**
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 40	< 7.6	< 3.8	< 14	< 6.9	< 6.9	< 6.9	< 3	< 6.9	< 6.4	< 6.4	< 4.8	< 6.4	< 6.4	< 6.4	< 0.48	< 6.4	< 1.9
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 40	< 5.4	< 2.7	< 13	< 6.7	< 6.7	< 6.7	< 1.6	< 6.7	< 6.8	< 6.8	< 3.7	< 6.8	< 6.8	< 6.8	< 0.37	< 6.8	< 1.9
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**91.0**	**52.0**	**20.0**	**20.0**	**29.0**	**27.0**	**12.0**	**15.0**	**13.0**	**19.0**	**21.0**	**14.0**	**11.0**	**12.0**	**14.0**	**21.0**	**14.0**	**81.0**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	---	---	---	---	---	**35.0**	---	---	---	**19.0**	---	---	---	**38.0**	---	**140**
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**140**	---	---	**28.0**	**13.0**	**7.30**	**5.60**	**14.0**	**8.20**	**11.0**	**10.00**	**13.0**	**13.0**	< 6.5	**7.60**	**4.10**	**7.70**	**33.0**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	---	---	---	---	---	< 5.5	---	---	---	< 6.4	---	---	---	**4.80**	---	**22.0**
Perfluorodecanesulfonic acid (PFDS)	NS	NS	**19.0**	< 12	< 6	< 14	< 7.2	< 7.2	< 7.2	< 3.6	< 7.2	< 6.4	< 6.4	< 5.3	< 6.4	< 6.4	< 6.4	< 0.53	< 6.4	**20.0**
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	**14.0**	**28.0**	**4.20**	< 13	< 6.6	**8.30**	< 6.6	< 3.1	**7.70**	**7.40**	**6.90**	**10.00**	**8.90**	< 3.6	**3.80**	**5.20**	**6.90**	**13.0**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 40	< 24	< 12	< 13	< 6.6	< 6.6	< 6.6	---	< 6.6	< 7	< 7	---	< 7	< 7	< 7	---	< 7	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 40	< 16	< 7.9	< 19	< 9.4	< 9.4	< 9.4	---	< 9.4	< 7.1	< 7.1	---	< 7.1	< 7.1	< 7.1	---	< 7.1	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 40	< 20	< 10	< 18	< 9	< 9	< 9	---	< 9	< 7	< 7	---	< 7	< 7	< 7	---	< 7	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 40	< 26	< 13	< 7	< 3.5	< 3.5	< 3.5	---	< 3.5	< 7.8	< 7.8	---	< 7.8	< 7.8	< 7.8	---	< 7.8	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**13.0**
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**3400**	**1200**	**240**	**1100**	**650**	**100.0**	**480**	**350**	**250**	**140**	**140**	**200**	**160**	**140**	**230**	**390**	**240**	**1300**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**750**	---	---	**1700**	**1300**	**380**	**490**	**660**	**960**	**760**	**730**	**370**	**310**	**67.0**	**97.0**	**120**	**180**	**580**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**140**
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**210**
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location / Sample ID / Sample Date	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	PC-01							PC-02		PC-03			PC-04		PC-06A			
			PC-01 2/1/2023	PC-01 4/5/2023	PC-01 7/25/2023	PC-01 11/21/2023	PC-01 1/31/2024	PC-01 4/18/2024	PC-01 6/12/2024	PC-02 6/17/2015	PC-02 4/24/2017	PC-03 8/20/2014	PC-03 6/17/2015	PC-03 4/24/2017	PC-04 6/17/2015	PC-04 3/8/2016	PC-06A 3/9/2016	PC-06A 4/27/2017	PC-06A 6/26/2018	PC-06A 1/10/2019
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**41.0**	**160**	**130**	**100.0**	**63.0**	**94.0**	**103**	**240**	**97.0**	**150**	**240**	**490**	**140**	**190**	**150**	**180**	**75.0**	**37.0**
Perfluorooctanoic acid (PFOA)	NS	40000000	**35.0**	**250**	**81.0**	**57.0**	**36.0**	**42.0**	**95.1**	**220**	**110**	**180**	**200**	**600**	**79.0**	**160**	**110**	**150**	**60.0**	**30.0**
Perfluorononanoic acid (PFNA)	NS	40000000	< 10	**27.0**	**30.0**	**25.0**	**28.0**	**22.0**	**42.8**	**180**	**42.0**	**70.0**	**97.0**	**91.0**	**36.0**	**92.0**	**73.0**	**160**	**55.0**	**25.0**
Perfluorodecanoic acid (PFDA)	NS	40000000	< 10	< 4.2	**7.50**	**7.10**	**4.50**	**4.70**	**8.90**	**14.0**	**8.60**	---	**5.60**	**11.0**	**4.60**	**20.0**	**11.0**	**22.0**	**13.0**	< 6.1
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**110**	**540**	**140**	**220**	**180**	**160**	**290**	**1100**	**450**	**1200**	**1000**	**3300**	**550**	**1000**	**800**	**540**	**300**	**190**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**78.0**	**510**	**440**	**230**	**300**	**460**	**595**	**3800**	**2200**	**3100**	**4700**	**2400**	**2200**	**4600**	**1300**	**3200**	**1300**	**1800**
PFAS SUM	20	NS	**264**	**1487**	**829**	**639**	**612**	**783**	**1135**	**5554**	**2908**	**4700**	**6243**	**6892**	**3010**	**6062**	**2444**	**4252**	**1803**	**2082**
Perfluorobutanoic Acid (PFBA)	NS	NS	**24.0**	**93.0**	**76.0**	**48.0**	**35.0**	**47.0**	**72.0**	**130**	**50.0**	---	**99.0**	**250**	**90.0**	**130**	**58.0**	**92.0**	**42.0**	**16.0**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**100.0**	**340**	**160**	**140**	**100.0**	**150**	**244**	**430**	**150**	---	**330**	**960**	**260**	**430**	**220**	**290**	**110**	**55.0**
Perfluorohexanoic acid (PFHxA)	NS	NS	**91.0**	**270**	**140**	**110**	**88.0**	**110**	**186**	**500**	**180**	---	**370**	**1000**	**220**	**440**	**320**	**410**	**170**	**86.0**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 10	**34.0**	**63.0**	**40.0**	**28.0**	**30.0**	**54.2**	**54.0**	**12.0**	---	**7.20**	**27.0**	**6.00**	**15.0**	**35.0**	**36.0**	**39.0**	**35.0**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 10	< 4.2	< 1.8	< 1.9	< 4.1	< 1.9	**1.27 J**	< 20	< 20	---	< 20	< 20	< 20	< 20	< 20	< 20	< 5	< 5
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 10	< 4.2	< 1.8	< 1.9	< 4.1	< 1.9	< 1.47	**5.30**	< 20	---	**5.20**	< 20	**5.00**	< 20	< 20	< 20	< 3.8	< 3.8
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 10	< 4.2	< 1.8	< 1.9	< 4.1	< 1.9	< 1.47	**7.70**	< 20	---	**7.80**	< 20	**8.20**	< 20	< 20	< 20	< 2.7	< 2.7
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 10	**19.0**	**8.60**	**17.0**	**8.50**	**6.70**	**22.4**	**85.0**	**34.0**	**140**	**75.0**	**230**	**40.0**	**73.0**	**96.0**	**68.0**	**33.0**	**16.0**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	< 10	**33.0**	**16.0**	**25.0**	**17.0**	**14.0**	**33.5**	---	---	---	---	---	---	---	---	---	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	< 10	**13.0**	**5.70**	**9.30**	< 4.1	**4.70**	**8.32**	**63.0**	**24.0**	---	**99.0**	**130**	**33.0**	**39.0**	**51.0**	**48.0**	---	---
Perfluorononanesulfonic Acid (PFNS)	NS	NS	< 10	< 4.2	**3.80**	**2.30**	< 4.1	**3.00**	**0.464 JF**	---	---	---	---	---	---	---	---	---	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 10	< 4.2	**4.10**	< 1.9	< 4.1	**1.90**	**0.950 JF**	< 20	< 20	---	< 20	< 20	< 20	**5.10**	< 20	< 20	< 6	< 6
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 10	**5.30**	**7.40**	**4.00**	< 4.1	**2.10**	**4.56 F**	**28.0**	**17.0**	---	**53.0**	**37.0**	**16.0**	**24.0**	< 20	< 20	< 3.4	< 3.4
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	---	---	---	---	---	---	< 14.7	< 50	< 20	---	< 50	< 20	< 50	< 20	< 20	< 20	< 12	< 12
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	---	---	---	---	---	---	< 14.7	< 50	< 20	---	< 50	< 20	< 50	< 20	< 20	< 20	< 7.9	< 7.9
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	< 10	< 4.2	< 1.8	< 1.9	< 4.1	< 1.9	< 1.47	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	< 10	< 4.2	< 1.8	< 1.9	< 4.1	< 1.9	< 1.47	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	---	---	---	---	---	---	< 1.47	< 50	< 20	---	< 50	< 20	< 50	< 20	< 20	< 20	< 10	< 10
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	---	---	---	---	---	---	< 1.47	< 50	< 20	---	< 50	< 20	< 50	< 20	< 20	< 20	< 13	< 13
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	< 10	< 4.2	< 1.8	< 1.9	< 4.1	< 1.9	**1.88 J**	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**220**	**560**	**97.0**	**51.0**	**32.0**	**63.0**	**322**	**1000**	**98.0**	---	**200**	**1000**	**85.0**	**370**	**64.0**	**150**	**29.0**	**7.70**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 10	**61.0**	**140**	**74.0**	**41.0**	**54.0**	**153**	**200**	**81.0**	---	**120**	**72.0**	**55.0**	**450**	< 20	**17.0**	---	---
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	< 10	< 4.2	< 1.8	< 1.9	< 4.1	< 1.9	< 2.94	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	< 10	< 4.2	< 1.8	< 1.9	< 4.1	< 1.9	< 2.94	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	< 10	< 4.2	< 1.8	< 1.9	< 4.1	< 1.9	< 2.94	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	**15.0**	**72.0**	**14.0**	**14.0**	**6.30**	**11.0**	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	**24.0**	**100.0**	**80.0**	**40.0**	**39.0**	**29.0**	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	< 10	< 4.2	< 1.8	< 1.9	< 4.1	< 1.9	< 2.94	---	---	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	< 10	< 4.2	< 1.8	< 1.9	< 4.1	< 1.9	< 5.89	---	---	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	< 10	< 4.2	< 1.8	< 1.9	< 4.1	< 1.9	< 5.89	---	---	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	< 10	< 4.2	< 1.8	< 1.9	< 4.1	< 1.9	< 5.89	---	---	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	< 10	< 4.2	< 1.8	< 1.9	< 4.1	< 1.9	< 5.89	---	---	---	---	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
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TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	PC-06A																	
Sample ID			PC-06A	PC-06A	PC-06A	PC-06A	PC-06A	PC-06A	PC-06A	PC-06A	PC-06A	PC-06A	PC-06A	PC-06A	PC-06A	PC-06A	PC-06A	PC-06A	PC-06A	PC-06A
Sample Date			4/24/2019	7/23/2019	10/29/2019	2/19/2020	5/12/2020	7/29/2020	10/21/2020	1/27/2021	5/20/2021	7/29/2021	11/1/2021	1/26/2022	4/20/2022	7/28/2022	11/10/2022	2/1/2023	4/5/2023	7/26/2023
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**83.0**	**45.0**	**86.0**	**71.0**	**9.30**	**43.0**	**37.0**	**43.0**	**42.0**	**24.0**	**32.0**	**39.0**	**40.0**	**33.0**	**47.0**	**37.0**	**36.0**	**26.0**
Perfluorooctanoic acid (PFOA)	NS	40000000	**68.0**	**33.0**	**62.0**	**67.0**	**4.10**	**37.0**	**28.0**	**35.0**	**31.0**	**14.0**	**22.0**	**29.0**	**34.0**	**26.0**	**30.0**	**29.0**	**27.0**	**19.0**
Perfluorononanoic acid (PFNA)	NS	40000000	**60.0**	**36.0**	**48.0**	**65.0**	**3.80**	**44.0**	**44.0**	**58.0**	**45.0**	**23.0**	**32.0**	**41.0**	**72.0**	**42.0**	**47.0**	**58.0**	**45.0**	**29.0**
Perfluorodecanoic acid (PFDA)	NS	40000000	**9.90**	< 4.1	**7.40**	**5.90**	**0.65**	**11.0**	**12.0**	**12.0**	**11.0**	< 3.9	**10.00**	**10.00**	**16.0**	**11.0**	**12.0**	**13.0**	**9.30**	**8.10**
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**310**	**150**	**290**	**180**	**23.0**	**99.0**	**71.0**	**83.0**	**72.0**	**49.0**	**59.0**	**62.0**	**83.0**	**62.0**	**72.0**	**72.0**	**65.0**	**53.0**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**1900**	**940**	**1100**	**1600**	**86.0**	**1300**	**920**	**1100**	**920**	**500**	**550**	**760**	**1100**	**730**	**470**	**640**	**390**	**440**
PFAS SUM	20	NS	**2431**	**1204**	**1593**	**1989**	**127**	**1534**	**1112**	**1331**	**1121**	**610**	**705**	**941**	**1345**	**904**	**678**	**849**	**572**	**575**
Perfluorobutanoic Acid (PFBA)	NS	NS	**48.0**	**23.0**	**44.0**	**41.0**	**6.00**	**24.0**	**19.0**	**23.0**	**21.0**	**5.50**	**16.0**	**17.0**	**16.0**	**14.0**	**18.0**	**17.0**	**17.0**	**11.0**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**130**	**66.0**	**130**	**120**	**15.0**	**60.0**	**50.0**	**56.0**	**55.0**	**25.0**	**34.0**	**49.0**	**48.0**	**35.0**	**40.0**	**45.0**	**40.0**	**28.0**
Perfluorohexanoic acid (PFHxA)	NS	NS	**180**	**86.0**	**150**	**120**	**15.0**	**58.0**	**44.0**	**60.0**	**55.0**	**29.0**	**39.0**	**50.0**	**57.0**	**39.0**	**47.0**	**43.0**	**43.0**	**30.0**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**51.0**	**36.0**	**49.0**	**55.0**	**5.10**	**40.0**	**34.0**	**29.0**	**40.0**	**22.0**	**48.0**	**45.0**	**30.0**	**28.0**	**53.0**	**63.0**	**71.0**	**82.0**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 6.8	< 6.8	< 6.8	< 6.8	< 0.25	< 6.8	< 8	< 5.9	< 8	< 8	< 8	< 8	< 0.59	< 8	< 1.9	< 10	< 4.2	< 1.8
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 6.9	< 6.9	< 6.9	< 6.9	< 0.3	< 6.9	< 6.4	< 4.8	< 6.4	< 6.4	< 6.4	< 6.4	< 0.48	< 6.4	< 1.9	< 10	< 4.2	< 1.8
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 6.7	< 6.7	< 6.7	< 6.7	< 0.16	< 6.7	< 6.8	< 3.7	< 6.8	< 6.8	< 6.8	< 6.8	< 0.37	< 6.8	< 1.9	< 10	< 4.2	< 1.8
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**27.0**	**9.00**	**14.0**	< 5.1	**2.10**	**6.40**	**7.00**	**7.70**	< 5.6	< 5.6	< 5.6	< 5.6	**5.30**	**5.80**	**4.80**	< 10	< 4.2	**3.30**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	---	---	**2.50**	---	---	< 7.3	---	---	---	---	**8.60**	---	**6.30**	< 10	**5.40**	**4.40**
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**24.0**	**6.50**	**10.00**	**5.20**	**0.88**	**6.80**	**7.30**	< 5.7	< 6.5	< 6.5	< 6.5	< 6.5	**7.10**	**7.00**	**8.10**	< 10	**4.80**	**4.00**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	---	---	< 0.55	---	---	< 6.4	---	---	---	---	< 0.64	---	**7.30**	< 10	**5.30**	**4.00**
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 7.2	< 7.2	< 7.2	< 7.2	< 0.36	< 7.2	< 6.4	< 5.3	< 6.4	< 6.4	< 6.4	< 6.4	< 0.53	< 6.4	**3.10**	< 10	< 4.2	**4.20**
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 6.6	< 6.6	< 6.6	< 6.6	< 0.31	< 6.6	< 3.6	< 8.1	< 3.6	< 3.6	< 3.6	< 3.6	< 0.81	< 3.6	< 1.9	< 10	< 4.2	**2.70**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 6.6	< 6.6	< 6.6	< 6.6	---	< 6.6	< 7	---	< 7	< 7	< 7	< 7	---	< 7	---	---	---	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 9.4	< 9.4	< 9.4	< 9.4	---	< 9.4	< 7.1	---	< 7.1	< 7.1	< 7.1	< 7.1	---	< 7.1	---	---	---	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 9	< 9	< 9	< 9	---	< 9	< 7	---	< 7	---	< 7	< 7	---	< 7	---	---	---	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 3.5	< 3.5	< 3.5	< 3.5	---	< 3.5	< 7.8	---	< 7.8	---	< 7.8	< 7.8	---	< 7.8	---	---	---	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**18.0**	< 5.9	**11.0**	**7.20**	**12.0**	**16.0**	**9.60**	**13.0**	**170**	**12.0**	**10.00**	**13.0**	**25.0**	**10.00**	**12.0**	**12.0**	**7.70**	**6.40**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**9.80**	< 5.9	< 5.9	< 5.9	**0.72**	**9.20**	**9.50**	**9.60**	**7.30**	< 6.7	**7.50**	< 6.7	**9.50**	**7.10**	**4.90**	< 10	**5.70**	**5.60**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**4.10**	< 10	< 4.2	**3.10**
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**14.0**	**26.0**	**18.0**	**11.0**
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9	< 10	< 4.2	< 1.8

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	PC-06A				PC-07					PC-08					PC-09			
Sample ID			PC-06A	PC-06A	PC-06A	PC-06A	PC-07	PC-07	PC-07	PC-07	PC-07	PC-08	PC-08	PC-08	PC-08	PC-08	PC-09	PC-09	PC-09	PC-09
Sample Date			11/3/2023	1/31/2024	4/18/2024	6/13/2024	4/2/2015	6/17/2015	10/7/2015	3/8/2016	4/27/2017	6/17/2015	10/8/2015	3/8/2016	4/27/2017	2/6/2018	4/2/2015	10/7/2015	3/9/2016	3/30/2016
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**11.0**	**6.90**	**28.0**	**23.8**	**2000**	**73.0**	**180**	**150**	**140**	**1600**	**340**	**130**	**260**	**98.0**	**30.0**	**80.0**	**910**	**1100**
Perfluorooctanoic acid (PFOA)	NS	40000000	**11.0**	**7.30**	**23.0**	**21.3**	**3500**	**27.0**	**98.0**	**140**	**130**	**2800**	**370**	**97.0**	**520**	**71.0**	**30.0**	**40.0**	**1200**	**1600**
Perfluorononanoic acid (PFNA)	NS	40000000	**24.0**	**21.0**	**48.0**	**44.5**	**600**	**31.0**	**73.0**	**98.0**	**110**	**740**	**120**	**86.0**	**260**	**32.0**	**50.0**	**38.0**	**530**	**360**
Perfluorodecanoic acid (PFDA)	NS	40000000	**8.70**	**7.60**	**12.0**	**9.23**	---	**5.50**	**9.30**	**7.40**	**13.0**	< 800	**18.0**	**7.10**	**74.0**	< 20	---	**6.70**	**210**	< 800
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**61.0**	**30.0**	**66.0**	**61.1**	**37000**	**220**	**570**	**880**	**540**	**24000**	**2200**	**540**	**3500**	**390**	**90.0**	**160**	**8700**	**16000**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**360**	**350**	**640**	**467**	**17000**	**500**	**700**	**1700**	**2900**	**15000**	**2500**	**1600**	**36000**	**1000**	**580**	**510**	**5300**	**8100**
PFAS SUM	20	NS	**476**	**423**	**817**	**627**	**60100**	**857**	**1630**	**2975**	**3833**	**44140**	**5548**	**2460**	**40614**	**1591**	**780**	**835**	**16850**	**27160**
Perfluorobutanoic Acid (PFBA)	NS	NS	**6.30**	**15.0**	**15.0**	**10.2 J**	---	**28.0**	**87.0**	**59.0**	**65.0**	**890**	**200**	**46.0**	**140**	**48.0**	---	**47.0**	**860**	**560**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**9.70**	**10.00**	**35.0**	**24.2**	---	**110**	**300**	**220**	**270**	**2000**	**620**	**170**	**610**	**160**	---	**130**	**1600**	**2300**
Perfluorohexanoic acid (PFHxA)	NS	NS	**12.0**	**11.0**	**33.0**	**26.0**	---	**120**	**420**	**370**	**360**	**6100**	**860**	**270**	**1100**	**220**	---	**130**	**2800**	**4200**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**47.0**	**50.0**	**77.0**	**52.4**	---	**160**	**38.0**	**29.0**	**31.0**	**840**	**240**	**130**	**490**	**52.0**	---	< 20	**450**	**230**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 4.2	< 4.1	< 1.7	< 3.20	---	< 20	< 20	< 20	< 20	< 800	< 20	< 20	< 200	< 20	---	< 20	**180**	< 800
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 4.2	< 4.1	< 1.7	< 3.20	---	**6.00**	< 20	< 20	< 20	< 800	< 20	< 20	< 200	< 20	---	< 20	< 800	< 800
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 4.2	< 4.1	< 1.7	< 3.20	---	**8.40**	< 20	< 20	< 20	< 800	< 20	< 20	< 200	< 20	---	< 20	< 800	< 800
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 4.2	< 4.1	**3.30**	**3.76**	**7700**	**29.0**	**110**	**120**	**58.0**	**5100**	**310**	**72.0**	**180**	**59.0**	< 90	**21.0**	**1900**	**3200**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	**4.90**	< 4.1	**5.80**	**6.72**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	< 4.2	< 4.1	**8.30**	**4.69**	---	< 20	**30.0**	**95.0**	**42.0**	**1900**	**130**	**73.0**	**560**	**48.0**	---	**12.0**	**840**	**880**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	< 4.2	< 4.1	**6.50**	< 3.20	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 4.2	< 4.1	**3.00**	< 3.20	---	< 20	< 20	< 20	< 20	< 800	< 20	< 20	< 200	< 20	---	< 20	< 800	< 800
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 4.2	< 4.1	**2.90**	< 3.20	---	**4.40**	< 20	< 20	< 20	< 800	**16.0**	**10.00**	< 200	**7.90**	---	**32.0**	**220**	< 800
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	---	---	---	< 32.0	---	< 50	< 20	< 20	< 20	< 2000	< 20	< 20	< 200	< 20	---	< 20	< 800	< 800
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	---	---	---	< 32.0	---	< 50	< 20	< 20	< 20	< 2000	< 20	< 20	< 200	< 20	---	< 20	< 800	< 800
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	< 4.2	< 4.1	< 1.7	< 3.20	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	< 4.2	< 4.1	< 1.7	< 3.20	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	---	---	---	< 3.20	---	< 50	< 20	< 20	< 20	< 2000	< 20	< 20	< 200	< 20	---	< 20	< 800	< 800
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	---	---	---	< 3.20	---	< 50	< 20	< 20	< 20	< 2000	< 20	< 20	< 200	< 20	---	< 20	< 800	< 800
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	< 4.2	< 4.1	< 1.7	< 12.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	< 4.2	**4.30**	**9.10**	**11.3 J**	---	**120**	**78.0**	**72.0**	**59.0**	**13000**	**760**	**92.0**	**2900**	**59.0**	---	**160**	**6600**	**8500**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 4.2	**4.10**	**6.40**	**6.83 J**	---	< 50	**11.0**	**5.70**	**19.0**	< 2000	**310**	**63.0**	**1200**	**24.0**	---	**31.0**	**550**	**450**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	< 4.2	< 4.1	< 1.7	< 6.40	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	< 4.2	< 4.1	< 1.7	< 6.40	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	< 4.2	< 4.1	< 1.7	< 6.40	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	< 4.2	< 4.1	**4.50**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	**13.0**	**11.0**	**15.0**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	< 4.2	< 4.1	< 1.7	< 6.40	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	< 4.2	< 4.1	< 1.7	< 12.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	< 4.2	< 4.1	< 1.7	< 12.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	< 4.2	< 4.1	< 1.7	< 12.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	< 4.2	< 4.1	< 1.7	< 12.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1	MCP Method 1	PC-09				PC-10			PC-11										
Sample ID	GW-1	GW-3	PC-09	PC-09	PC-09	PC-09	PC-10	PC-10	PC-10	PC-11	PC-11	PC-11	PC-11	PC-11	PC-11	PC-11	PC-11	PC-11	PC-11	PC-11
Sample Date	Standards	Standards	4/28/2017	1/10/2019	10/30/2019	10/21/2020	4/6/2015	4/28/2017	6/13/2024	4/2/2015	5/12/2016	4/27/2017	2/6/2018	6/26/2018	1/10/2019	4/24/2019	7/23/2019	10/29/2019	2/19/2020	5/12/2020
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**65.0**	**81.0**	**120**	**77.0**	**70.0**	**75.0**	**28.0**	**490**	**470**	**270**	**180**	**200**	**310**	**210**	< 210	**160**	**210**	**140**
Perfluorooctanoic acid (PFOA)	NS	40000000	**31.0**	**64.0**	**100.0**	**66.0**	**50.0**	**67.0**	**20.5**	**550**	**430**	**250**	**180**	**250**	**410**	**640**	< 240	**150**	**290**	**140**
Perfluorononanoic acid (PFNA)	NS	40000000	**37.0**	**53.0**	**90.0**	**88.0**	**60.0**	**49.0**	**15.2**	**100.0**	**260**	**120**	**190**	**230**	**190**	**1700**	**540**	**320**	**140**	**130**
Perfluorodecanoic acid (PFDA)	NS	40000000	**7.50**	**7.00**	**15.0**	**11.0**	---	**8.40**	**2.04**	---	< 800	**13.0**	**20.0**	**31.0**	**60.0**	**450**	< 260	**73.0**	**69.0**	**56.0**
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**130**	**360**	**420**	**200**	**250**	**350**	**75.8**	**2100**	**3300**	**940**	**790**	**1500**	**1500**	**2400**	**1200**	**800**	**1300**	**720**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**280**	**1700**	**2300**	**1400**	**790**	**560**	**182**	**4400**	**32000**	**3600**	**4000**	**9600**	**14000**	**200000**	**68000**	**22000**	**18000**	**12000**
PFAS SUM	20	NS	**551**	**2265**	**3045**	**1842**	**1220**	**1109**	**324**	**7640**	**36460**	**5193**	**5360**	**11811**	**16470**	**205400**	**69740**	**23503**	**20009**	**13186**
Perfluorobutanoic Acid (PFBA)	NS	NS	**29.0**	**35.0**	**65.0**	**42.0**	---	**44.0**	**20.9**	---	**380**	**130**	**120**	**140**	**140**	< 270	< 270	**100.0**	**110**	**90.0**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**98.0**	**120**	**190**	**110**	---	**170**	**64.4**	---	**1200**	**480**	**430**	**460**	**600**	**480**	**270**	**370**	**450**	**250**
Perfluorohexanoic acid (PFHxA)	NS	NS	**110**	**190**	**290**	**140**	---	**180**	**58.7**	---	**1500**	**510**	**460**	**530**	**690**	**560**	**340**	**360**	**610**	**280**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**80.0**	**87.0**	**45.0**	**34.0**	---	**8.90**	**16.4**	---	**240**	**25.0**	**84.0**	**130**	**280**	**280**	< 220	**270**	**120**	**110**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 20	< 5	< 6.8	< 8	---	< 20	< 1.49	---	< 800	< 20	< 20	< 10	< 25	< 170	< 170	< 34	< 14	< 25
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 20	< 3.8	< 6.9	< 6.4	---	< 20	< 1.49	---	< 800	< 20	< 20	< 7.6	< 19	< 240	< 240	< 35	< 14	< 30
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 20	< 2.7	< 6.7	< 6.8	---	< 20	< 1.49	---	< 800	< 20	< 20	< 5.4	< 14	< 230	< 230	< 34	< 13	< 16
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**22.0**	**39.0**	**41.0**	**20.0**	< 90	**35.0**	**6.48**	**190**	**350**	**100.0**	**70.0**	**70.0**	**58.0**	< 270	< 270	**41.0**	**44.0**	< 37
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	---	---	---	---	**8.95**	---	---	---	---	---	---	---	---	---	---	**37.0**
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**17.0**	---	**35.0**	**17.0**	---	**24.0**	**2.21**	---	**500**	**72.0**	**71.0**	---	---	**1100**	**280**	**59.0**	**28.0**	**110**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	---	---	---	---	< 1.49	---	---	---	---	---	---	---	---	---	---	< 55
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 20	< 6	< 7.2	< 6.4	---	< 20	< 1.49	---	< 800	< 20	**9.50**	< 12	< 30	< 220	< 220	< 36	< 14	< 36
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	**22.0**	**7.90**	**8.00**	**5.80**	---	**18.0**	**6.98**	---	< 800	**53.0**	**34.0**	**41.0**	**21.0**	< 270	< 270	< 33	< 13	< 31
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 20	< 12	< 6.6	< 7	---	< 20	< 14.9	---	< 800	< 20	< 20	< 24	< 60	< 270	< 270	< 33	< 13	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 20	< 7.9	< 9.4	< 7.1	---	< 20	< 14.9	---	< 800	< 20	< 20	< 16	< 40	< 200	< 200	< 47	< 19	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	---	---	< 1.49	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	---	---	< 1.49	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 20	< 10	< 9	< 7	---	< 20	< 1.49	---	< 800	< 20	< 20	< 20	< 50	< 280	< 280	< 45	< 18	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 20	< 13	< 3.5	< 7.8	---	< 20	< 1.49	---	< 800	< 20	< 20	< 26	< 65	< 340	< 350	< 18	< 7	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	---	---	< 5.96	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**66.0**	**35.0**	**34.0**	**29.0**	---	**150**	**31.6**	---	**2600**	**220**	**620**	**1700**	**1800**	**3700**	**1800**	**860**	**1400**	**680**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 20	---	**16.0**	**11.0**	---	**7.10**	**5.92 J**	---	**1100**	**84.0**	**190**	---	---	**11000**	**4000**	**1400**	**1600**	**1200**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	---	---	< 2.98	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	---	---	< 2.98	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	---	---	< 2.98	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	---	---	< 2.98	---	---	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	---	---	< 5.96	---	---	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	---	---	< 5.96	---	---	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	---	---	< 5.96	---	---	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	---	---	< 5.96	---	---	---	---	---	---	---	---	---	---	---

Notes:
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PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1	MCP Method 1	PC-11											PC-12			PC-13			PC-14
Sample ID	GW-1	GW-3	PC-11	PC-11	PC-11	PC-11	PC-11	PC-11	PC-11	PC-11	PC-11	PC-11	PC-11	PC-12	PC-12	PC-12	PC-13	PC-13	PC-13	PC-14
Sample Date	Standards	Standards	7/29/2020	10/21/2020	1/27/2021	5/19/2021	7/29/2021	11/1/2021	1/26/2022	4/20/2022	11/10/2022	11/1/2023	6/12/2024	6/17/2015	5/12/2016	4/27/2017	6/17/2015	4/24/2017	6/12/2024	8/20/2014
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**130**	**160**	**92.0**	**65.0**	**75.0**	**88.0**	**60.0**	**87.0**	**210**	**99.0**	**240**	**200**	**160**	**180**	**260**	**200**	**97.8**	**50.0**
Perfluorooctanoic acid (PFOA)	NS	40000000	**130**	**150**	**78.0**	**59.0**	**74.0**	**58.0**	**40.0**	**70.0**	**120**	**80.0**	**377**	**140**	**150**	**150**	**280**	**170**	**97.2**	**40.0**
Perfluorononanoic acid (PFNA)	NS	40000000	**110**	**100.0**	**74.0**	**69.0**	**61.0**	**78.0**	**63.0**	**88.0**	**82.0**	**74.0**	**226**	**94.0**	**94.0**	**150**	**77.0**	**170**	**112**	**40.0**
Perfluorodecanoic acid (PFDA)	NS	40000000	**55.0**	**52.0**	**49.0**	**32.0**	**31.0**	**21.0**	**18.0**	**20.0**	**22.0**	**9.20**	**24.2**	**9.60**	**8.30**	**10.00**	**6.00**	**11.0**	**9.98**	---
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**610**	**640**	**250**	**170**	**320**	**270**	**160**	**240**	**620**	**200**	**1100**	**500**	**940**	**680**	**1300**	**940**	**207**	**120**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**9500**	**7200**	**2700**	**2100**	**2400**	**2900**	**1900**	**1600**	**2300**	**830**	**5600**	**1300**	**1700**	**1600**	**2400**	**2800**	**715**	**550**
PFAS SUM	20	NS	**10535**	**8302**	**3243**	**2495**	**2961**	**3415**	**2241**	**2105**	**3354**	**1292**	**7567**	**2244**	**3052**	**2770**	**4323**	**4291**	**1239**	**800**
Perfluorobutanoic Acid (PFBA)	NS	NS	**70.0**	**60.0**	**44.0**	**28.0**	**33.0**	**53.0**	**30.0**	**38.0**	**100.0**	**67.0**	**139**	**130**	**81.0**	**130**	**130**	**200**	**53.7**	---
Perfluoropentanoic Acid (PFPeA)	NS	NS	**230**	**220**	**160**	**86.0**	**120**	**190**	**110**	**150**	**310**	**150**	**502**	**670**	**260**	**520**	**480**	**1100**	**157**	---
Perfluorohexanoic acid (PFHxA)	NS	NS	**220**	**220**	**150**	**97.0**	**120**	**190**	**120**	**160**	**250**	**160**	**653**	**560**	**420**	**490**	**500**	**850**	**152**	---
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**120**	**100.0**	**72.0**	**170**	**110**	**180**	**120**	**79.0**	**240**	**150**	**171**	**5.00**	**16.0**	**32.0**	**7.70**	**48.0**	**20.6**	---
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 14	< 16	< 5.9	< 8	< 20	< 8	< 8	< 5.9	< 1.7	< 1.9	< 1.50	< 20	< 20	< 20	< 20	< 20	< 1.44	---
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 14	< 13	< 4.8	< 6.4	< 20	< 6.4	< 6.4	< 4.8	< 1.7	< 1.9	< 1.50	**5.50**	< 20	< 20	**5.40**	< 20	< 1.44	---
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 13	< 14	< 3.7	< 6.8	< 20	< 6.8	< 6.8	< 3.7	< 1.7	< 1.9	< 1.50	**7.70**	< 20	< 20	**8.20**	< 20	< 1.44	---
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**30.0**	**21.0**	**20.0**	**7.10**	< 20	**18.0**	**11.0**	**19.0**	**35.0**	**20.0**	**75.7**	**42.0**	**94.0**	**83.0**	**90.0**	**86.0**	**24.5**	< 90
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	**24.0**	---	---	---	---	**27.0**	**54.0**	**35.0**	**132**	---	---	---	---	---	**26.2**	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**31.0**	**22.0**	**14.0**	**11.0**	< 20	**11.0**	< 6.5	**11.0**	**31.0**	**19.0**	**93.6**	**18.0**	**73.0**	**56.0**	**99.0**	**69.0**	**13.8**	---
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	< 6.4	---	---	---	---	< 6.4	**37.0**	**39.0**	**21.4**	---	---	---	---	---	**0.924 J**	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 14	< 13	< 5.3	< 6.4	< 20	< 6.4	< 6.4	< 5.3	**21.0**	**35.0**	**0.922 JF**	< 20	< 20	< 20	< 20	< 20	< 1.44	---
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	**17.0**	**11.0**	**20.0**	**15.0**	< 20	**3.70**	**6.20**	**8.90**	**24.0**	**13.0**	**15.9**	**41.0**	**39.0**	**23.0**	**24.0**	**24.0**	**26.8**	---
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 13	< 14	---	< 7	< 20	< 7	< 7	---	---	---	< 15.0	< 50	< 20	< 20	< 50	< 20	< 14.4	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 19	< 14	---	< 7.1	< 20	< 7.1	< 7.1	---	---	---	< 15.0	< 50	< 20	< 20	< 50	< 20	< 14.4	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	---	---	---	---	< 1.7	< 1.9	< 1.50	---	---	---	---	---	< 1.44	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	---	---	---	---	< 1.7	< 1.9	< 1.50	---	---	---	---	---	< 1.44	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 18	< 14	---	< 7	---	< 7	< 7	---	---	---	< 1.50	< 50	< 20	< 20	< 50	< 20	< 1.44	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 7	< 16	---	< 7.8	---	< 7.8	< 7.8	---	---	---	< 1.50	< 50	< 20	< 20	< 50	< 20	< 1.44	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	---	---	---	---	< 1.7	**2.40**	**6.87**	---	---	---	---	---	< 5.78	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**400**	**430**	**210**	**110**	**190**	**250**	**90.0**	**130**	**210**	**250**	**1630**	**480**	**130**	**240**	**520**	**420**	**99.4**	---
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**1100**	**930**	**430**	**300**	**500**	**530**	**170**	**140**	**280**	**120**	**806**	**40.0**	**26.0**	< 20	**48.0**	**14.0**	**16.7**	---
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	---	---	---	---	< 1.7	< 1.9	< 3.00	---	---	---	---	---	< 2.89	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	---	---	---	---	< 1.7	< 1.9	< 3.00	---	---	---	---	---	< 2.89	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	---	---	---	---	< 1.7	< 1.9	< 3.00	---	---	---	---	---	< 2.89	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	---	---	**40.0**	**54.0**	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	---	---	**290**	**180**	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	---	---	---	---	< 1.7	< 1.9	< 3.00	---	---	---	---	---	< 2.89	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	---	---	---	---	< 1.7	< 1.9	< 6.00	---	---	---	---	---	< 5.78	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	---	---	---	---	< 1.7	< 1.9	< 6.00	---	---	---	---	---	< 5.78	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	---	---	---	---	< 1.7	< 1.9	< 6.00	---	---	---	---	---	< 5.78	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	---	---	---	---	< 1.7	< 1.9	< 6.00	---	---	---	---	---	< 5.78	---

Notes:
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4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1	MCP Method 1	PC-14						PC-15			PC-16D								
Sample ID	GW-1	GW-3	PC-14	PC-14	PC-14	PC-14	PC-14	PC-14	PC-15	PC-15	PC-15	PC-16D	PC-16D	PC-16D	PC-16D	PC-16D	PC-16D	PC-16D	PC-16D	PC-16D
Sample Date	Standards	Standards	3/30/2016	4/28/2017	11/2/2021	11/11/2022	11/1/2023	6/13/2024	4/2/2015	4/28/2017	10/30/2019	4/2/2015	10/7/2015	4/27/2017	2/6/2018	6/26/2018	1/10/2019	1/10/2019	4/24/2019	7/23/2019
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**310**	**170**	**43.0**	**62.0**	**34.0**	**26.8**	**90.0**	**59.0**	**77.0**	**160**	**110**	**29.0**	**79.0**	**170**	**31.0**	**13.0**	**140**	**74.0**
Perfluorooctanoic acid (PFOA)	NS	40000000	**250**	**160**	**26.0**	**76.0**	**18.0**	**18.6**	**100.0**	**80.0**	**55.0**	**70.0**	**84.0**	**20.0**	**64.0**	**150**	**21.0**	**9.30**	**140**	**75.0**
Perfluorononanoic acid (PFNA)	NS	40000000	**110**	**130**	**37.0**	**69.0**	**34.0**	**24.7**	**50.0**	**53.0**	**52.0**	**60.0**	**45.0**	**27.0**	**77.0**	**100.0**	**20.0**	< 8.7	**110**	**66.0**
Perfluorodecanoic acid (PFDA)	NS	40000000	**10.00**	**11.0**	< 3.9	**7.30**	**6.40**	**3.30**	---	**9.30**	**4.90**	---	**8.10**	**4.50**	< 20	**13.0**	< 6.1	< 6.1	**8.70**	< 4.1
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**1700**	**830**	**92.0**	**160**	**77.0**	**59.7**	**360**	**350**	**290**	**560**	**260**	**140**	**280**	**670**	**140**	**60.0**	**520**	**270**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**2100**	**1600**	**700**	**700**	**380**	**234**	**1300**	**780**	**970**	**700**	**560**	**390**	**980**	**1900**	**390**	**160**	**2000**	**1400**
PFAS SUM	20	NS	**4480**	**2901**	**898**	**1074**	**549**	**367**	**1900**	**1331**	**1449**	**1550**	**1067**	**611**	**1480**	**3003**	**602**	**242**	**2919**	**1885**
Perfluorobutanoic Acid (PFBA)	NS	NS	**140**	**110**	**18.0**	**39.0**	**15.0**	**15.7**	---	**36.0**	**36.0**	---	**77.0**	**14.0**	**54.0**	**97.0**	**18.0**	**7.50**	**74.0**	**38.0**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**530**	**490**	**57.0**	**110**	**42.0**	**50.3**	---	**120**	**120**	---	**270**	**48.0**	**240**	**320**	**61.0**	**27.0**	**230**	**120**
Perfluorohexanoic acid (PFHxA)	NS	NS	**680**	**450**	**63.0**	**99.0**	**42.0**	**47.0**	---	**130**	**160**	---	**250**	**71.0**	**240**	**380**	**89.0**	**38.0**	**270**	**170**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**17.0**	**15.0**	**12.0**	**24.0**	**16.0**	**14.4**	---	**11.0**	**16.0**	---	< 20	**5.50**	**19.0**	**23.0**	**6.50**	**2.60**	**24.0**	**22.0**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 20	< 20	< 8	< 1.8	< 1.9	< 1.49	---	< 20	< 6.8	---	< 20	< 20	< 20	< 5	< 5	< 5	< 6.8	< 6.8
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 20	< 20	< 6.4	< 1.8	< 1.9	< 1.49	---	< 20	< 6.9	---	< 20	< 20	< 20	< 3.8	< 3.8	< 3.8	< 6.9	< 6.9
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 20	< 20	< 6.8	< 1.8	< 1.9	< 1.49	---	< 20	< 6.7	---	< 20	< 20	< 20	< 2.7	< 2.7	< 2.7	< 6.7	< 6.7
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**290**	**84.0**	< 5.6	**15.0**	**6.50**	**5.94**	< 90	**27.0**	**25.0**	< 90	**35.0**	**19.0**	**36.0**	**65.0**	**16.0**	**5.70**	**38.0**	**23.0**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	---	**21.0**	**8.70**	**7.71**	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**73.0**	**68.0**	< 6.5	**28.0**	**6.20**	**2.77**	---	**19.0**	**17.0**	---	**15.0**	**13.0**	**24.0**	---	---	---	**27.0**	**15.0**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	---	**5.60**	**2.30**	< 1.49	---	---	---	---	---	---	---	---	---	---	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	**5.50**	< 20	< 6.4	< 1.8	< 1.9	< 1.49	---	< 20	< 7.2	---	< 20	< 20	< 20	< 6	< 6	< 6	< 7.2	< 7.2
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	**20.0**	**24.0**	< 3.6	**10.00**	**18.0**	**6.23**	---	**52.0**	**6.90**	---	**28.0**	**13.0**	**21.0**	**22.0**	**4.60**	< 3.4	**21.0**	**16.0**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 20	< 20	< 7	---	---	< 14.9	---	< 20	**10.00**	---	< 20	< 20	< 20	< 12	< 12	< 12	< 6.6	< 6.6
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 20	< 20	< 7.1	---	---	< 14.9	---	< 20	**14.0**	---	< 20	< 20	< 20	< 7.9	< 7.9	< 7.9	< 9.4	< 9.4
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	< 1.8	< 1.9	< 1.49	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	< 1.8	< 1.9	< 1.49	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 20	< 20	< 7	---	---	< 1.49	---	< 20	< 9	---	< 20	< 20	< 20	< 10	< 10	< 10	< 9	< 9
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 20	< 20	< 7.8	---	---	< 1.49	---	< 20	< 3.5	---	< 20	< 20	< 20	< 13	< 13	< 13	< 3.5	< 3.5
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	< 1.8	< 1.9	< 5.96	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**1600**	**290**	**17.0**	**51.0**	**21.0**	**33.5**	---	**270**	**110**	---	**170**	**9.30**	**120**	**140**	**10.00**	< 6.6	**210**	**69.0**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**110**	**22.0**	**28.0**	**7.20**	**6.50**	**6.99**	---	**34.0**	**9.60**	---	**27.0**	< 20	< 20	---	---	---	**71.0**	**12.0**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	< 1.8	< 1.9	< 2.98	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	< 1.8	< 1.9	< 2.98	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	< 1.8	< 1.9	< 2.98	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	**22.0**	**7.60**	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	**41.0**	**7.80**	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	< 1.8	< 1.9	< 2.98	---	---	---	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	< 1.8	< 1.9	< 5.96	---	---	---	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	< 1.8	< 1.9	< 5.96	---	---	---	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	< 1.8	< 1.9	< 5.96	---	---	---	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	< 1.8	< 1.9	< 5.96	---	---	---	---	---	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location / Sample ID / Sample Date	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	PC-16D																
			PC-16D 10/29/2019	PC-16D 2/19/2020	PC-16D 5/12/2020	PC-16D 7/29/2020	PC-16D 10/21/2020	PC-16D 1/27/2021	PC-16D 5/20/2021	PC-16D 7/28/2021	PC-16 11/1/2021	PC-16D 1/26/2022	PC-16D 4/20/2022	PC-16D 7/28/2022	PC-16D 11/10/2022	PC-16D 2/1/2023	PC-16D 4/5/2023	PC-16D 7/26/2023	PC-16D 11/2/2023	PC-16D 2/1/2024
Analyte (ng/L)																			
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**90.0**	**92.0**	**61.0**	**68.0**	**63.0**	**54.0**	**47.0**	**15.0**	**9.00**	**25.0**	**42.0**	**88.0**	**71.0**	**19.0**	**110**	**28.0**	**22.0**	**20.0**
Perfluorooctanoic acid (PFOA)	NS	40000000	**91.0**	**130**	**57.0**	**99.0**	**99.0**	**46.0**	**70.0**	**18.0**	**8.90**	**18.0**	**38.0**	**130**	**89.0**	**16.0**	**120**	**20.0**	**11.0**	**14.0**
Perfluorononanoic acid (PFNA)	NS	40000000	**65.0**	**110**	**63.0**	**49.0**	**62.0**	**48.0**	**83.0**	**23.0**	**8.90**	**26.0**	**45.0**	**70.0**	**59.0**	**18.0**	**72.0**	**25.0**	< 11	**15.0**
Perfluorodecanoic acid (PFDA)	NS	40000000	< 4.1	**7.20**	**8.50**	**11.0**	**11.0**	**4.90**	**9.20**	**6.00**	< 3.9	< 3.9	**4.20**	**10.00**	**11.0**	< 10	**8.20**	< 10	< 11	< 11
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**250**	**360**	**170**	**260**	**280**	**110**	**220**	**72.0**	**49.0**	**55.0**	**160**	**680**	**360**	**75.0**	**490**	**88.0**	**54.0**	**45.0**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**1300**	**1600**	**1200**	**930**	**1900**	**690**	**1200**	**460**	**250**	**300**	**580**	**1300**	**1700**	**290**	**1300**	**410**	**200**	**82.0**
PFAS SUM	20	NS	**1796**	**2299**	**1560**	**1417**	**2415**	**953**	**1629**	**594**	**326**	**424**	**869**	**2278**	**2290**	**418**	**2100**	**571**	**287**	**176**
Perfluorobutanoic Acid (PFBA)	NS	NS	**48.0**	**52.0**	**30.0**	**31.0**	**36.0**	**34.0**	**26.0**	**7.80**	< 3.9	**18.0**	**21.0**	**74.0**	**44.0**	**11.0**	**92.0**	**19.0**	**20.0**	**23.0**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**140**	**160**	**88.0**	**110**	**110**	**90.0**	**88.0**	**23.0**	**15.0**	**45.0**	**74.0**	**320**	**160**	**36.0**	**280**	**53.0**	**57.0**	**61.0**
Perfluorohexanoic acid (PFHxA)	NS	NS	**170**	**160**	**110**	**110**	**100.0**	**79.0**	**90.0**	**24.0**	**17.0**	**34.0**	**69.0**	**260**	**160**	**36.0**	**250**	**55.0**	**52.0**	**60.0**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**24.0**	**15.0**	**17.0**	**25.0**	**22.0**	**11.0**	**15.0**	**12.0**	**8.10**	< 6.2	**17.0**	**20.0**	**29.0**	< 10	**16.0**	**13.0**	< 11	< 11
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 6.8	< 6.8	< 2.5	< 6.8	< 8	< 0.59	< 8	< 8	< 8	< 8	< 0.59	< 8	< 1.8	< 10	< 4.1	< 10	< 11	< 11
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 6.9	< 6.9	< 3	< 6.9	< 6.4	< 0.48	< 6.4	< 6.4	< 6.4	< 6.4	< 0.48	< 6.4	< 1.8	< 10	< 4.1	< 10	< 11	< 11
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 6.7	< 6.7	< 1.6	< 6.7	< 6.8	< 0.37	< 6.8	< 6.8	< 6.8	< 6.8	< 0.37	< 6.8	< 1.8	< 10	< 4.1	< 10	< 11	< 11
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**19.0**	**17.0**	**13.0**	**15.0**	**14.0**	**7.30**	**10.00**	< 5.6	< 5.6	< 5.6	**10.00**	**46.0**	**26.0**	< 10	**40.0**	< 10	< 11	< 11
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	**15.0**	---	---	**12.0**	---	---	---	---	**19.0**	---	**38.0**	< 10	**63.0**	< 10	< 11	< 11
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**18.0**	**26.0**	**15.0**	**13.0**	**19.0**	**8.70**	**16.0**	**7.70**	< 6.5	< 6.5	**5.60**	**24.0**	**51.0**	< 10	**46.0**	< 10	< 11	< 11
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	< 5.5	---	---	< 0.64	---	---	---	---	< 0.64	---	**8.40**	< 10	**8.00**	< 10	< 11	< 11
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 7.2	< 7.2	< 3.6	< 7.2	< 6.4	< 0.53	< 6.4	< 6.4	< 6.4	< 6.4	< 0.53	< 6.4	< 1.8	< 10	< 4.1	< 10	< 11	< 11
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	**20.0**	< 6.6	**10.00**	**16.0**	**11.0**	**8.90**	< 3.6	**9.30**	< 3.6	< 3.6	**4.30**	**5.70**	**9.00**	< 10	**13.0**	< 10	< 11	< 11
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 6.6	< 6.6	---	< 6.6	< 7	---	< 7	< 7	< 7	< 7	---	< 7	---	---	---	---	---	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 9.4	< 9.4	---	< 9.4	< 7.1	---	< 7.1	< 7.1	< 7.1	< 7.1	---	< 7.1	---	---	---	---	---	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8	< 10	< 4.1	< 10	< 11	< 11
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8	< 10	< 4.1	< 10	< 11	< 11
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 9	< 9	---	< 9	< 7	---	< 7	---	< 7	< 7	---	< 7	---	---	---	---	---	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 3.5	< 3.5	---	< 3.5	< 7.8	---	< 7.8	---	< 7.8	< 7.8	---	< 7.8	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8	< 10	< 4.1	< 10	< 11	< 11
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**47.0**	**120**	**78.0**	**250**	**140**	**27.0**	**80.0**	**18.0**	**9.00**	**9.60**	**41.0**	**100.0**	**140**	**16.0**	**160**	**32.0**	**11.0**	**11.0**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**23.0**	**22.0**	**19.0**	**17.0**	**34.0**	**4.10**	**11.0**	**6.90**	< 6.7	< 6.7	**3.40**	**12.0**	**35.0**	< 10	**19.0**	< 10	< 11	< 11
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8	< 10	< 4.1	< 10	< 11	< 11
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8	< 10	< 4.1	< 10	< 11	< 11
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8	< 10	< 4.1	< 10	< 11	< 11
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	**28.0**	< 10	**50.0**	< 10	< 11	< 11
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	**48.0**	**19.0**	**62.0**	**19.0**	**11.0**	< 11
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8	< 10	< 4.1	< 10	< 11	< 11
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8	< 10	< 4.1	< 10	< 11	< 11
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8	< 10	< 4.1	< 10	< 11	< 11
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8	< 10	< 4.1	< 10	< 11	< 11
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8	< 10	< 4.1	< 10	< 11	< 11

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1	MCP Method 1	PC-16D		PC-16S	PC-17					PC-18									PC-19
Sample ID	GW-1	GW-3	PC-16D	PC-16D	PC-16S	PC-17	PC-17	PC-17	PC-17	PC-17	PC-18	PC-18	PC-18	PC-18	PC-18	PC-18	PC-18	PC-18	PC-18	PC-19
Sample Date	Standards	Standards	4/18/2024	6/12/2024	6/12/2024	8/20/2014	10/8/2015	4/27/2017	2/6/2018	6/12/2024	6/17/2015	10/7/2015	4/27/2017	2/6/2018	1/10/2019	10/29/2019	10/21/2020	11/1/2021	11/10/2022	4/2/2015
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**43.0**	**61.7**	< 1.62 U	**10.00**	**42.0**	**22.0**	**16.0**	**19.7**	**150**	**380**	**76.0**	**89.0**	**140**	**80.0**	**21.0**	**20.0**	**18.0**	**370**
Perfluorooctanoic acid (PFOA)	NS	40000000	**34.0**	**48.6**	< 1.62 U	< 20	**24.0**	**19.0**	**17.0**	**14.7**	**110**	**590**	**53.0**	**70.0**	**110**	**75.0**	**18.0**	**6.30**	**8.20**	**260**
Perfluorononanoic acid (PFNA)	NS	40000000	**43.0**	**51.0**	**0.706 J**	< 20	**17.0**	**24.0**	**15.0**	**13.0**	**71.0**	**160**	**58.0**	**76.0**	**130**	**79.0**	**20.0**	**10.00**	**12.0**	**120**
Perfluorodecanoic acid (PFDA)	NS	40000000	**2.10**	**5.47**	< 1.62	---	< 20	< 20	< 20	**1.03 J**	**5.50**	**8.50**	**5.10**	**13.0**	**6.20**	**7.20**	**6.80**	< 3.9	**2.20**	---
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**98.0**	**142**	**0.722 J**	**30.0**	**120**	**120**	**77.0**	**36.2**	**820**	**4100**	**210**	**330**	**540**	**220**	**57.0**	**59.0**	**32.0**	**2200**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**290**	**522**	**23.9**	**140**	**230**	**330**	**140**	**118**	**1200**	**3900**	**580**	**890**	**1500**	**1500**	**330**	**290**	**140**	**3300**
PFAS SUM	20	NS	**510**	**831**	**25.3**	**180**	**433**	**515**	**265**	**203**	**2357**	**9139**	**982**	**1468**	**2426**	**1961**	**453**	**385**	**212**	**6250**
Perfluorobutanoic Acid (PFBA)	NS	NS	**25.0**	**37.8**	< 6.49	---	**27.0**	**6.90**	**14.0**	**8.59**	**71.0**	**270**	**29.0**	**46.0**	**67.0**	**44.0**	**13.0**	**8.40**	**10.00**	---
Perfluoropentanoic Acid (PFPeA)	NS	NS	**70.0**	**105**	< 3.25	---	**71.0**	**33.0**	**38.0**	**27.8**	**220**	**650**	**130**	**130**	**220**	**120**	**31.0**	**37.0**	**20.0**	---
Perfluorohexanoic acid (PFHxA)	NS	NS	**74.0**	**96.2**	< 1.62	---	**76.0**	**55.0**	**38.0**	**26.9**	**270**	**1300**	**180**	**210**	**360**	**150**	**32.0**	**37.0**	**20.0**	---
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**13.0**	**17.4**	< 1.62	---	< 20	< 20	< 20	**3.31**	**8.20**	**42.0**	**7.80**	**15.0**	**14.0**	**7.60**	**8.90**	< 6.2	**6.80**	---
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 1.7	< 1.60	< 1.62	---	< 20	< 20	< 20	< 1.54	< 20	< 20	< 20	< 20	< 5	< 6.8	< 8	< 8	< 1.8	---
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 1.7	< 1.60	< 1.62	---	< 20	< 20	< 20	< 1.54	**4.90**	< 20	< 20	< 20	< 3.8	< 6.9	< 6.4	< 6.4	< 1.8	---
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 1.7	< 1.60	< 1.62	---	< 20	< 20	< 20	< 1.54	**7.70**	< 20	< 20	< 20	< 2.7	< 6.7	< 6.8	< 6.8	< 1.8	---
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**8.20**	**12.0**	< 1.62	< 90	**14.0**	**15.0**	**15.0**	**3.09**	**72.0**	**850**	**35.0**	**50.0**	**68.0**	**18.0**	**8.00**	< 5.6	**2.90**	**170**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	**11.0**	**15.5**	< 1.62	---	---	---	---	**4.25**	---	---	---	---	---	---	---	---	**3.00**	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**5.60**	**7.10**	< 1.62	---	**10.00**	**9.50**	< 20	**2.39**	**23.0**	**370**	**19.0**	**41.0**	---	**19.0**	< 6.5	< 6.5	**2.40**	---
Perfluorononanesulfonic Acid (PFNS)	NS	NS	< 1.7	< 1.60	< 1.62	---	---	---	---	< 1.54	---	---	---	---	---	---	---	---	< 1.8	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 1.7	< 1.60	< 1.62	---	< 20	< 20	< 20	< 1.54	< 20	< 20	< 20	< 20	< 6	< 7.2	< 6.4	< 6.4	< 1.8	---
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	**9.60**	**16.1**	< 1.62	---	**7.50**	< 20	**5.10**	**1.29 J**	**17.0**	**12.0**	**8.70**	**7.60**	< 3.4	< 6.6	< 3.6	< 3.6	< 1.8	---
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	---	< 16.0	< 16.2	---	< 20	< 20	< 20	< 15.4	< 50	< 20	< 20	< 20	< 12	< 6.6	< 7	< 7	---	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	---	< 16.0	< 16.2	---	< 20	< 20	< 20	**1.90 J**	< 50	< 20	< 20	< 20	< 7.9	< 9.4	< 7.1	< 7.1	---	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	< 1.7	< 1.60	< 1.62	---	---	---	---	< 1.54	---	---	---	---	---	---	---	---	< 1.8	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	< 1.7	< 1.60	< 1.62	---	---	---	---	< 1.54	---	---	---	---	---	---	---	---	< 1.8	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	---	< 1.60	< 1.62	---	< 20	< 20	< 20	< 1.54	< 50	< 20	< 20	< 20	< 10	< 9	< 7	< 7	---	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	---	< 1.60	< 1.62	---	< 20	< 20	< 20	< 1.54	< 50	< 20	< 20	< 20	< 13	< 3.5	< 7.8	< 7.8	---	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	< 1.7	< 6.39	< 6.49	---	---	---	---	< 6.14	---	---	---	---	---	---	---	---	< 1.8	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**27.0**	**39.6**	< 6.49	---	**37.0**	< 20	**11.0**	**16.2**	**460**	**3500**	**95.0**	**48.0**	**69.0**	**21.0**	**16.0**	< 6.5	**7.80**	---
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**3.30**	**10.4**	< 6.49	---	**9.60**	< 20	< 20	**4.89 J**	**50.0**	**110**	< 20	< 20	---	**14.0**	**31.0**	< 6.7	**3.00**	---
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	< 1.7	< 3.20	< 3.25	---	---	---	---	< 3.07	---	---	---	---	---	---	---	---	< 1.8	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	< 1.7	< 3.20	< 3.25	---	---	---	---	< 3.07	---	---	---	---	---	---	---	---	< 1.8	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	< 1.7	< 3.20	< 3.25	---	---	---	---	< 3.07	---	---	---	---	---	---	---	---	< 1.8	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	**11.0**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**3.80**	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	**15.0**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**6.40**	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	< 1.7	< 3.20	< 3.25	---	---	---	---	< 3.07	---	---	---	---	---	---	---	---	< 1.8	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	< 1.7	< 6.39	< 6.49	---	---	---	---	< 6.14	---	---	---	---	---	---	---	---	< 1.8	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	< 1.7	< 6.39	< 6.49	---	---	---	---	< 6.14	---	---	---	---	---	---	---	---	< 1.8	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	< 1.7	< 6.39	< 6.49	---	---	---	---	< 6.14	---	---	---	---	---	---	---	---	< 1.8	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	< 1.7	< 6.39	< 6.49	---	---	---	---	< 6.14	---	---	---	---	---	---	---	---	< 1.8	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1	MCP Method 1	PC-19				PC-20D	PC-21D		PC-21S	PC-22		PC-23D		PC-23S	PC-24			PC-25	
Sample ID	GW-1	GW-3	PC-19	PC-19	PC-19	PC-19	PC-20D	PC-21D	PC-21D	PC-21S	PC-22	PC-22	PC-23D	PC-23D	PC-23S	PC-24	PC-24	PC-24	PC-25	PC-25
Sample Date	Standards	Standards	3/30/2016	4/27/2017	10/30/2019	6/13/2024	3/9/2016	3/9/2016	6/13/2024	6/13/2024	4/2/2015	4/28/2017	6/17/2015	6/14/2024	6/14/2024	3/30/2016	4/28/2017	6/14/2024	6/17/2015	6/14/2024
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**150**	**200**	**95.0**	**74.6**	**250**	**40.0**	**5.14**	**3.20**	**120**	**170**	**52.0**	**73.4**	**0.402 J**	**48.0**	**62.0**	**31.1**	**150**	**0.620 J**
Perfluorooctanoic acid (PFOA)	NS	40000000	**120**	**290**	**170**	**125**	**200**	**19.0**	**3.63**	**4.36**	**100.0**	**170**	**73.0**	**63.1**	**1.09 J**	**22.0**	**33.0**	**28.9**	**260**	**1.08 J**
Perfluorononanoic acid (PFNA)	NS	40000000	**100.0**	**130**	**130**	**179**	**90.0**	**17.0**	**3.58**	**0.527 J**	**100.0**	**83.0**	**37.0**	**41.4**	**0.851 J**	**24.0**	**22.0**	**41.9**	**89.0**	< 1.49
Perfluorodecanoic acid (PFDA)	NS	40000000	< 20	**9.80**	**14.0**	**6.69**	**9.70**	< 20	< 1.46	< 1.50	---	**10.00**	< 20	**5.10**	< 1.55	< 20	**6.00**	**5.98**	**12.0**	< 1.49
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**440**	**1200**	**450**	**522**	**1300**	**140**	**13.4**	**18.4**	**370**	**930**	**310**	**223**	**1.14 J**	**140**	**230**	**59.4**	**1000**	**3.69**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**1600**	**2000**	**1900**	**1240**	**3200**	**230**	**20.5**	**9.77**	**1200**	**1400**	**1000**	**847**	**18.8**	**420**	**320**	**474**	**2300**	**7.63**
PFAS SUM	20	NS	**2410**	**3830**	**2759**	**2147**	**5050**	**446**	**46.3**	**36.3**	**1890**	**2763**	**1472**	**1253**	**22.3**	**654**	**673**	**641**	**3811**	**13.0**
Perfluorobutanoic Acid (PFBA)	NS	NS	**93.0**	**150**	**47.0**	**61.0**	**130**	**19.0**	**3.57 J**	**1.34 J**	**---**	**99.0**	**42.0**	**37.0**	< 6.19	**30.0**	**32.0**	**16.4**	**71.0**	< 5.97
Perfluoropentanoic Acid (PFPeA)	NS	NS	**320**	**360**	**140**	**187**	**430**	**90.0**	**7.62**	**4.07**	**---**	**370**	**260**	**120**	**1.03 J**	**91.0**	**110**	**48.8**	**260**	**1.02 J**
Perfluorohexanoic acid (PFHxA)	NS	NS	**380**	**460**	**160**	**142**	**480**	**78.0**	**8.35**	**3.26**	**---**	**360**	**180**	**83.2**	**0.688 J**	**81.0**	**110**	**51.2**	**300**	**0.926 J**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**9.20**	**7.30**	**6.60**	**10.7**	**14.0**	< 20	**2.06**	< 1.50	**---**	**22.0**	**8.80**	**22.5**	< 1.55	< 20	**23.0**	**17.2**	**44.0**	< 1.49
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 20	< 20	< 6.8	< 3.20	< 20	< 20	< 1.46	< 1.50	---	< 20	< 20	< 1.48	< 1.55	< 20	< 20	< 1.49	< 20	< 1.49
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 20	< 20	< 6.9	< 3.20	< 20	< 20	< 1.46	< 1.50	---	< 20	**5.20**	< 1.48	< 1.55	< 20	< 20	< 1.49	**5.00**	< 1.49
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 20	< 20	< 6.7	< 3.20	< 20	< 20	< 1.46	< 1.50	---	< 20	**8.10**	< 1.48	< 1.55	< 20	< 20	< 1.49	**7.70**	< 1.49
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**60.0**	**95.0**	**18.0**	**34.6**	**95.0**	**18.0**	**1.68**	< 1.50	< 90	**97.0**	< 20	**14.3**	< 1.55	**15.0**	**26.0**	**5.69**	**20.0**	< 1.49
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	---	**70.8**	---	---	**1.77**	**1.23 J**	---	---	---	**28.2**	< 1.55	---	---	**7.12**	---	**0.358 J**
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**54.0**	**46.0**	**22.0**	**47.3**	**87.0**	**7.10**	< 1.46	**0.542 J**	**---**	**72.0**	< 20	**20.2**	< 1.55	**11.0**	**18.0**	**5.05**	**23.0**	< 1.49
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	---	< 3.20	---	---	< 1.46	< 1.50	---	---	---	**0.804 J**	< 1.55	---	---	< 1.49	---	< 1.49
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 20	< 20	< 7.2	< 3.20	< 20	< 20	< 1.46	< 1.50	---	< 20	< 20	< 1.48	< 1.55	< 20	< 20	< 1.49	< 20	< 1.49
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	**25.0**	**22.0**	< 6.6	**3.36**	**39.0**	< 20	**1.34 J**	< 1.50	**---**	**31.0**	**250**	**11.8**	< 1.55	< 20	**9.00**	**7.99**	**140**	< 1.49
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 20	< 20	< 6.6	< 32.0	< 20	< 20	< 14.6	< 15.0	**---**	< 20	< 50	< 14.8	< 15.5	< 20	< 20	< 14.9	< 50	< 14.9
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 20	< 20	< 9.4	< 32.0	< 20	< 20	< 14.6	< 15.0	**---**	< 20	< 50	< 14.8	< 15.5	< 20	< 20	< 14.9	< 50	< 14.9
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	< 3.20	---	---	< 1.46	< 1.50	**---**	---	---	< 1.48	< 1.55	---	---	< 1.49	---	< 1.49
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	< 3.20	---	---	< 1.46	< 1.50	**---**	---	---	< 1.48	< 1.55	---	---	< 1.49	---	< 1.49
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 20	< 20	< 9	< 3.20	< 20	< 20	< 1.46	< 1.50	**---**	< 20	< 50	< 1.48	< 1.55	< 20	< 20	< 1.49	< 50	< 1.49
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 20	< 20	< 3.5	< 3.20	< 20	< 20	< 1.46	< 1.50	**---**	< 20	< 50	< 1.48	< 1.55	< 20	< 20	< 1.49	< 50	< 1.49
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	< 12.8	---	---	< 5.86	< 6.02	**---**	---	---	< 5.90	< 6.19	---	---	< 5.97	---	< 5.97
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**160**	**120**	**110**	**39.3**	**260**	**46.0**	< 5.86	< 6.02	**---**	**260**	**180**	**49.2**	< 6.19	**32.0**	**51.0**	**16.0**	**180**	< 5.97
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**8.40**	**9.80**	**8.70**	**7.90 J**	**120**	< 20	< 5.86	< 6.02	**---**	**35.0**	< 50	**5.10 J**	< 6.19	**6.50**	< 20	**7.41**	**92.0**	< 5.97
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	< 6.40	---	---	< 2.93	< 3.01	**---**	---	---	< 2.95	< 3.09	---	---	< 2.98	---	< 2.99
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	< 6.40	---	---	< 2.93	< 3.01	**---**	---	---	< 2.95	< 3.09	---	---	< 2.98	---	< 2.99
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	< 6.40	---	---	< 2.93	< 3.01	**---**	---	---	< 2.95	< 3.09	---	---	< 2.98	---	< 2.99
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	---	---	**---**	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	---	---	**---**	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	< 6.40	---	---	< 2.93	< 3.01	**---**	---	---	< 2.95	< 3.09	---	---	< 2.98	---	< 2.99
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	< 12.8	---	---	< 5.86	< 6.02	**---**	---	---	< 5.90	< 6.19	---	---	< 5.97	---	< 5.97
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	< 12.8	---	---	< 5.86	< 6.02	**---**	---	---	< 5.90	< 6.19	---	---	< 5.97	---	< 5.97
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	< 12.8	---	---	< 5.86	< 6.02	**---**	---	---	< 5.90	< 6.19	---	---	< 5.97	---	< 5.97
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	< 12.8	---	---	< 5.86	< 6.02	**---**	---	---	< 5.90	< 6.19	---	---	< 5.97	---	< 5.97

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1	MCP Method 1 GW-3	PC-26					PC-28											
Sample ID	Standards	Standards	PC-26	PC-26	PC-26	PC-26	PC-26	PC-28	PC-28	PC-28	PC-28	PC-28	PC-28	PC-28	PC-28	PC-28	PC-28	PC-28	PC-28
Sample Date			6/17/2015	10/8/2015	3/8/2016	4/24/2017	6/12/2024	3/9/2016	4/28/2017	1/10/2019	4/24/2019	7/23/2019	10/28/2019	2/19/2020	5/12/2020	7/29/2020	10/21/2020	1/27/2021	5/20/2021	7/28/2021
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**260**	**210**	**150**	**38.0**	**13.3**	**92.0**	**110**	**20.0**	**24.0**	**25.0**	**33.0**	**23.0**	**41.0**	**30.0**	**89.0**	**66.0**	**45.0**	**53.0**
Perfluorooctanoic acid (PFOA)	NS	40000000	**210**	**190**	**98.0**	**21.0**	**10.2**	**27.0**	**61.0**	< 3.3	< 7.4	< 7.4	**12.0**	< 7.4	**18.0**	**12.0**	**65.0**	**48.0**	**22.0**	**38.0**
Perfluorononanoic acid (PFNA)	NS	40000000	**67.0**	**120**	**97.0**	**39.0**	**18.0**	**44.0**	**57.0**	< 8.7	< 4.9	< 4.9	**8.60**	< 4.9	**15.0**	**10.00**	**49.0**	**61.0**	**33.0**	**45.0**
Perfluorodecanoic acid (PFDA)	NS	40000000	**5.60**	**11.0**	< 20	< 20	**2.60**	< 20	**10.00**	< 6.1	< 4.1	< 4.1	< 4.1	< 4.1	**2.20**	< 4.1	**8.00**	**9.70**	**5.60**	**9.10**
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**1600**	**890**	**360**	**130**	**24.4**	**100.0**	**320**	**17.0**	**15.0**	**30.0**	**94.0**	**72.0**	**120**	**71.0**	**230**	**170**	**110**	**120**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**1000**	**1900**	**1200**	**380**	**199**	**400**	**770**	**38.0**	**18.0**	**82.0**	**270**	**270**	**430**	**200**	**1100**	**1200**	**820**	**1000**
PFAS SUM	20	NS	**3143**	**3321**	**1905**	**608**	**268**	**663**	**1328**	**75.0**	**57.0**	**137**	**418**	**365**	**626**	**323**	**1541**	**1555**	**1036**	**1265**
Perfluorobutanoic Acid (PFBA)	NS	NS	**120**	**110**	**68.0**	**19.0**	**5.58 J**	**35.0**	**45.0**	< 5.5	**8.50**	< 7	**13.0**	< 7	**15.0**	**14.0**	**52.0**	**34.0**	**17.0**	**24.0**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**370**	**310**	**250**	**61.0**	**14.3**	**110**	**150**	**14.0**	**16.0**	**15.0**	**33.0**	**21.0**	**44.0**	**34.0**	**130**	**83.0**	**46.0**	**69.0**
Perfluorohexanoic acid (PFHxA)	NS	NS	**550**	**530**	**350**	**76.0**	**17.6**	**110**	**200**	**11.0**	**15.0**	**15.0**	**35.0**	**24.0**	**49.0**	**31.0**	**130**	**82.0**	**45.0**	**66.0**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**120**	**110**	**45.0**	**22.0**	**5.93**	**79.0**	**29.0**	**4.20**	**7.80**	**4.80**	**4.90**	< 4.3	**11.0**	**9.50**	**31.0**	**24.0**	**46.0**	**58.0**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 20	< 20	< 20	< 20	< 1.47	< 20	< 20	< 5	< 6.8	< 6.8	< 6.8	< 6.8	< 0.25	< 6.8	< 8	< 5.9	< 8	< 8
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	**5.70**	< 20	< 20	< 20	< 1.47	< 20	< 20	< 3.8	< 6.9	< 6.9	< 6.9	< 6.9	< 0.3	< 6.9	< 6.4	< 4.8	< 6.4	< 6.4
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	**8.40**	< 20	< 20	< 20	< 1.47	< 20	< 20	< 2.7	< 6.7	< 6.7	< 6.7	< 6.7	< 0.16	< 6.7	< 6.8	< 3.7	< 6.8	< 6.8
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**180**	**150**	**53.0**	**18.0**	**2.25**	**17.0**	**47.0**	< 5.4	< 5.1	< 5.1	**7.70**	< 5.1	**11.0**	**6.10**	**11.0**	**13.0**	< 5.6	**7.10**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	---	---	**3.17**	---	---	---	---	---	---	---	**14.0**	---	---	**18.0**	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**64.0**	**120**	**34.0**	< 20	**1.90**	**6.40**	**33.0**	---	< 3.3	< 3.3	< 3.3	< 3.3	**5.30**	< 3.3	**12.0**	**13.0**	< 6.5	**8.80**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	---	---	< 1.47	---	---	---	---	---	---	---	< 0.55	---	---	< 6.4	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 20	< 20	< 20	< 20	< 1.47	< 20	< 20	< 6	< 7.2	< 7.2	< 7.2	< 7.2	< 0.36	< 7.2	< 6.4	< 5.3	< 6.4	< 6.4
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	**7.70**	**6.30**	< 20	< 20	< 1.47	**37.0**	**28.0**	**8.50**	**12.0**	**7.40**	**8.90**	< 6.6	**6.70**	< 6.6	**6.20**	< 8.1	< 3.6	**5.00**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 50	< 20	< 20	< 20	< 14.7	< 20	< 20	< 12	< 6.6	< 6.6	< 6.6	< 6.6	---	< 6.6	< 7	---	< 7	< 7
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 50	< 20	< 20	< 20	< 14.7	< 20	< 20	< 7.9	< 9.4	< 9.4	< 9.4	< 9.4	---	< 9.4	< 7.1	---	< 7.1	< 7.1
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	< 1.47	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	< 1.47	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 50	< 20	< 20	< 20	< 1.47	< 20	< 20	< 10	< 9	< 9	< 9	< 9	---	< 9	< 7	---	< 7	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 50	< 20	< 20	< 20	< 1.47	< 20	< 20	< 13	< 3.5	< 3.5	< 3.5	< 3.5	---	< 3.5	< 7.8	---	< 7.8	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	< 5.88	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**510**	**140**	**190**	**45.0**	**4.05 J**	**110**	**79.0**	< 6.6	**13.0**	**19.0**	**13.0**	**6.30**	**12.0**	**10.00**	**21.0**	**20.0**	**25.0**	**27.0**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**100.0**	**15.0**	< 20	< 20	< 5.88	**23.0**	**25.0**	---	**7.40**	< 5.9	**6.70**	< 5.9	**6.80**	< 5.9	**7.70**	**9.70**	< 6.7	**8.70**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	< 2.94	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	< 2.94	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	< 2.94	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	< 2.94	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	< 5.88	---	---	---	---	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	< 5.88	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	< 5.88	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	< 5.88	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	PC-28											PC-29					PC-30	
Sample ID			PC-28	PC-28	PC-28	PC-28	PC-28	PC-28	PC-28	PC-28	PC-28	PC-28	PC-28	PC-29	PC-29	PC-29	PC-29	PC-29	PC-30	PC-30
Sample Date			11/3/2021	1/26/2022	4/20/2022	7/28/2022	11/10/2022	2/1/2023	4/4/2023	7/25/2023	2/1/2024	4/18/2024	6/13/2024	3/9/2016	4/28/2017	11/10/2022	11/1/2023	6/13/2024	3/9/2016	4/27/2017
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**43.0**	**51.0**	**47.0**	**40.0**	**75.0**	**66.0**	**44.0**	**26.0**	**13.0**	**18.0**	**26.8**	< 20	**7.00**	< 1.8	< 1.8	**1.44 J**	**160**	**180**
Perfluorooctanoic acid (PFOA)	NS	40000000	**16.0**	**26.0**	**34.0**	**30.0**	**56.0**	**48.0**	**29.0**	**11.0**	**7.00**	**6.10**	**13.4**	< 20	< 20	< 1.8	< 1.8	**1.76**	**88.0**	**120**
Perfluorononanoic acid (PFNA)	NS	40000000	**23.0**	**28.0**	**59.0**	**45.0**	**82.0**	**95.0**	**46.0**	**17.0**	**14.0**	**20.0**	**27.7**	< 20	< 20	< 1.8	< 1.8	< 1.45	**97.0**	**110**
Perfluorodecanoic acid (PFDA)	NS	40000000	< 3.9	**7.50**	**14.0**	**9.00**	**15.0**	**18.0**	**10.00**	**4.80**	< 4.1	**4.80**	**6.75**	< 20	< 20	< 1.8	< 1.8	< 1.45	**7.40**	**9.50**
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**85.0**	**83.0**	**95.0**	**75.0**	**130**	**120**	**76.0**	**55.0**	**37.0**	**45.0**	**54.4**	**7.20**	< 20	**3.60**	**2.10**	**1.98**	**550**	**500**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**730**	**670**	**1200**	**550**	**960**	**1200**	**600**	**190**	**300**	**300**	**341**	**28.0**	**13.0**	**2.40**	< 1.8	**1.38 J**	**980**	**2500**
PFAS SUM	20	NS	**897**	**866**	**1449**	**749**	**1318**	**1547**	**805**	**304**	**371**	**394**	**470**	**35.2**	**20.0**	**6.00**	**2.10**	**6.56**	**1882**	**3420**
Perfluorobutanoic Acid (PFBA)	NS	NS	**14.0**	**23.0**	**21.0**	**21.0**	**36.0**	**26.0**	**19.0**	**10.00**	**6.00**	**6.10**	**10.9**	< 20	< 20	< 1.8	< 1.8	**2.12 J**	**73.0**	**63.0**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**53.0**	**65.0**	**53.0**	**53.0**	**96.0**	**75.0**	**47.0**	**24.0**	**16.0**	**17.0**	**33.6**	**7.90**	**6.00**	**2.60**	< 1.8	**6.04**	**270**	**240**
Perfluorohexanoic acid (PFHxA)	NS	NS	**52.0**	**65.0**	**57.0**	**59.0**	**130**	**82.0**	**52.0**	**22.0**	**13.0**	**15.0**	**28.9**	**4.70**	**6.30**	**1.80**	< 1.8	**3.62**	**350**	**390**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**18.0**	**39.0**	**59.0**	**28.0**	**60.0**	**72.0**	**50.0**	**43.0**	**20.0**	**23.0**	**29.9**	< 20	< 20	< 1.8	< 1.8	< 1.45	**84.0**	**35.0**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 8	< 8	< 0.59	< 8	< 1.8	< 10	< 4.1	< 1.8	< 4.1	< 1.8	< 1.50	< 20	< 20	< 1.8	< 1.8	< 1.45	< 20	< 20
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 6.4	< 6.4	< 0.48	< 6.4	< 1.8	< 10	< 4.1	< 1.8	< 4.1	< 1.8	< 1.50	< 20	< 20	< 1.8	< 1.8	< 1.45	< 20	< 20
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 6.8	< 6.8	< 0.37	< 6.8	< 1.8	< 10	< 4.1	< 1.8	< 4.1	< 1.8	< 1.50	< 20	< 20	< 1.8	< 1.8	< 1.45	< 20	< 20
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 5.6	**6.20**	**5.60**	**7.80**	**14.0**	< 10	< 4.1	**3.30**	< 4.1	**2.30**	**3.52**	< 20	< 20	< 1.8	< 1.8	< 1.45	**92.0**	**63.0**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	**9.30**	---	**15.0**	**10.00**	**6.60**	**5.10**	< 4.1	**4.30**	**5.72**	---	---	< 1.8	< 1.8	**0.276 J**	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	< 6.5	< 6.5	**6.10**	**6.70**	**19.0**	**10.00**	**6.80**	**3.10**	< 4.1	**3.10**	**2.44**	< 20	< 20	< 1.8	< 1.8	< 1.45	**31.0**	**75.0**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	< 0.64	---	**9.10**	< 10	**6.00**	**2.70**	< 4.1	**3.50**	**0.601 J**	---	---	< 1.8	< 1.8	< 1.45	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 6.4	< 6.4	< 0.53	< 6.4	**2.50**	< 10	< 4.1	**2.70**	< 4.1	< 1.8	< 1.50	< 20	< 20	< 1.8	< 1.8	< 1.45	< 20	< 20
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 3.6	< 3.6	**3.80**	< 3.6	**3.90**	< 10	< 4.1	**3.60**	< 4.1	**2.40**	**2.96**	< 20	< 20	< 1.8	< 1.8	< 1.45	**8.80**	**6.40**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 7	< 7	---	< 7	---	---	---	---	---	---	< 15.0	< 20	< 20	---	---	< 14.5	< 20	< 20
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 7.1	< 7.1	---	< 7.1	---	---	---	---	---	---	< 15.0	< 20	< 20	---	---	< 14.5	< 20	< 20
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	< 1.8	< 10	< 4.1	< 1.8	< 4.1	< 1.8	< 1.50	---	---	< 1.8	< 1.8	< 1.45	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	< 1.8	< 10	< 4.1	< 1.8	< 4.1	< 1.8	< 1.50	---	---	< 1.8	< 1.8	< 1.45	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 7	< 7	---	< 7	---	---	---	---	---	---	< 1.50	< 20	< 20	---	---	< 1.45	< 20	< 20
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 7.8	< 7.8	---	< 7.8	---	---	---	---	---	---	< 1.50	< 20	< 20	---	---	< 1.45	< 20	< 20
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	< 1.8	< 10	< 4.1	< 1.8	< 4.1	< 1.8	< 6.01	---	---	< 1.8	< 1.8	< 5.80	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	< 6.5	**11.0**	**58.0**	**18.0**	**41.0**	**28.0**	**11.0**	**15.0**	**9.00**	**9.90**	**9.11**	< 20	< 20	< 1.8	< 1.8	< 5.80	**64.0**	**160**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 6.7	< 6.7	**11.0**	**7.50**	**10.00**	**11.0**	**5.40**	**3.30**	< 4.1	**3.90**	**4.91 J**	< 20	< 20	< 1.8	< 1.8	< 5.80	< 20	**16.0**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	< 1.8	< 10	< 4.1	< 1.8	< 4.1	< 1.8	< 3.00	---	---	< 1.8	< 1.8	< 2.90	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	< 1.8	< 10	< 4.1	< 1.8	< 4.1	< 1.8	< 3.00	---	---	< 1.8	< 1.8	< 2.90	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	< 1.8	< 10	< 4.1	< 1.8	< 4.1	< 1.8	< 3.00	---	---	< 1.8	< 1.8	< 2.90	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	**20.0**	**11.0**	**5.80**	**2.30**	< 4.1	**2.80**	---	---	---	< 1.8	< 1.8	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	**40.0**	**47.0**	**25.0**	**3.80**	**4.10**	**4.80**	---	---	---	< 1.8	< 1.8	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	< 1.8	< 10	< 4.1	< 1.8	< 4.1	< 1.8	< 3.00	---	---	< 1.8	< 1.8	< 2.90	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	< 1.8	< 10	< 4.1	< 1.8	< 4.1	< 1.8	< 6.01	---	---	< 1.8	< 1.8	< 5.80	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	< 1.8	< 10	< 4.1	< 1.8	< 4.1	< 1.8	< 6.01	---	---	< 1.8	< 1.8	< 5.80	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	< 1.8	< 10	< 4.1	< 1.8	< 4.1	< 1.8	< 6.01	---	---	< 1.8	< 1.8	< 5.80	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	< 1.8	< 10	< 4.1	< 1.8	< 4.1	< 1.8	< 6.01	---	---	< 1.8	< 1.8	< 5.80	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location / Sample ID / Sample Date	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	PC-30																	
			PC-30 2/6/2018	PC-30 6/26/2018	PC-30 1/10/2019	PC-30 4/24/2019	PC-30 7/23/2019	PC-30 10/29/2019	PC-30 2/19/2020	PC-30 5/12/2020	PC-30 7/29/2020	PC-30 10/21/2020	PC-30 1/27/2021	PC-30 5/20/2021	PC-30 7/28/2021	PC-30 11/1/2021	PC-30 1/26/2022	PC-30 4/20/2022	PC-30 7/28/2022	PC-30 11/10/2022
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**120**	**130**	**110**	**110**	**96.0**	**71.0**	**87.0**	**80.0**	**48.0**	**47.0**	**48.0**	**40.0**	**34.0**	**43.0**	**35.0**	**33.0**	**25.0**	**29.0**
Perfluorooctanoic acid (PFOA)	NS	40000000	**98.0**	**99.0**	**85.0**	**85.0**	**79.0**	**55.0**	**74.0**	**45.0**	**38.0**	**32.0**	**30.0**	**26.0**	**21.0**	**30.0**	**25.0**	**23.0**	**16.0**	**21.0**
Perfluorononanoic acid (PFNA)	NS	40000000	**86.0**	**80.0**	**88.0**	**100.0**	**100.0**	**61.0**	**74.0**	**45.0**	**57.0**	**40.0**	**24.0**	**40.0**	**35.0**	**51.0**	**34.0**	**23.0**	**19.0**	**43.0**
Perfluorodecanoic acid (PFDA)	NS	40000000	**18.0**	**12.0**	**14.0**	**12.0**	< 4.1	**6.00**	**5.90**	**8.20**	**7.70**	**6.20**	**5.30**	**5.20**	**4.90**	< 3.9	**6.40**	**4.70**	**4.80**	**5.30**
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**510**	**510**	**390**	**340**	**300**	**220**	**210**	**180**	**120**	**100.0**	**76.0**	**64.0**	**68.0**	**96.0**	**72.0**	**63.0**	**43.0**	**59.0**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**1900**	**1600**	**2200**	**1200**	**1300**	**960**	**1200**	**880**	**1100**	**850**	**580**	**540**	**450**	**720**	**480**	**340**	**180**	**340**
PFAS SUM	20	NS	**2732**	**2431**	**2887**	**1847**	**1875**	**1373**	**1651**	**1238**	**1371**	**1075**	**763**	**715**	**613**	**940**	**652**	**487**	**288**	**497**
Perfluorobutanoic Acid (PFBA)	NS	NS	**54.0**	**65.0**	**54.0**	**56.0**	**46.0**	**38.0**	**51.0**	**49.0**	**24.0**	**20.0**	**25.0**	**19.0**	**17.0**	**17.0**	**17.0**	**14.0**	**12.0**	**13.0**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**180**	**190**	**170**	**170**	**150**	**100.0**	**150**	**280**	**65.0**	**51.0**	**62.0**	**50.0**	**46.0**	**55.0**	**45.0**	**38.0**	**29.0**	**33.0**
Perfluorohexanoic acid (PFHxA)	NS	NS	**280**	**300**	**260**	**230**	**220**	**130**	**150**	**130**	**84.0**	**65.0**	**67.0**	**59.0**	**52.0**	**65.0**	**54.0**	**48.0**	**32.0**	**40.0**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**28.0**	**29.0**	**28.0**	**31.0**	**34.0**	**31.0**	**24.0**	**33.0**	**19.0**	**20.0**	**17.0**	**19.0**	**11.0**	**13.0**	**17.0**	**16.0**	**11.0**	**12.0**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 20	< 5	< 5	< 6.8	< 6.8	< 6.8	< 6.8	< 2.5	< 6.8	< 8	< 0.59	< 8	< 8	< 8	< 8	< 0.59	< 8	< 1.8
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 20	< 3.8	< 3.8	< 6.9	< 6.9	< 6.9	< 6.9	< 3	< 6.9	< 6.4	< 0.48	< 6.4	< 6.4	< 6.4	< 6.4	< 0.48	< 6.4	< 1.8
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 20	< 2.7	< 2.7	< 6.7	< 6.7	< 6.7	< 6.7	< 1.6	< 6.7	< 6.8	< 0.37	< 6.8	< 6.8	< 6.8	< 6.8	< 0.37	< 6.8	< 1.8
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**62.0**	**66.0**	**38.0**	**36.0**	**31.0**	**16.0**	**8.30**	**13.0**	**14.0**	**8.50**	**5.60**	< 5.6	**6.60**	< 5.6	< 5.6	**4.60**	**6.10**	**4.60**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	---	---	---	---	---	**16.0**	---	---	**8.90**	---	---	---	---	**6.90**	---	**5.80**
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**67.0**	---	---	**25.0**	**19.0**	**11.0**	**7.20**	**10.00**	**8.20**	< 6.5	**4.90**	< 6.5	**7.40**	< 6.5	< 6.5	**3.40**	< 6.5	**8.80**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	---	---	---	---	---	< 5.5	---	---	< 0.64	---	---	---	---	< 0.64	---	**2.40**
Perfluorodecanesulfonic acid (PFDS)	NS	NS	**8.30**	< 6	< 6	< 7.2	< 7.2	< 7.2	< 7.2	< 3.6	< 7.2	< 6.4	< 0.53	< 6.4	< 6.4	< 6.4	< 6.4	< 0.53	< 6.4	< 1.8
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	**6.60**	< 3.4	< 3.4	< 6.6	< 6.6	< 6.6	< 6.6	< 3.1	< 6.6	< 3.6	< 0.81	< 3.6	< 3.6	< 3.6	< 3.6	**0.99**	< 3.6	< 1.8
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 20	< 12	< 12	< 6.6	< 6.6	< 6.6	< 6.6	---	< 6.6	< 7	---	< 7	< 7	< 7	< 7	---	< 7	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 20	< 7.9	< 7.9	< 9.4	< 9.4	< 9.4	< 9.4	---	< 9.4	< 7.1	---	< 7.1	< 7.1	< 7.1	< 7.1	---	< 7.1	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 20	< 10	< 10	< 9	< 9	< 9	< 9	---	< 9	< 7	---	< 7	---	< 7	< 7	---	< 7	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 20	< 13	< 13	< 3.5	< 3.5	< 3.5	< 3.5	---	< 3.5	< 7.8	---	< 7.8	---	< 7.8	< 7.8	---	< 7.8	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**46.0**	**66.0**	**23.0**	**62.0**	**58.0**	**30.0**	**22.0**	**86.0**	**22.0**	**14.0**	**14.0**	**13.0**	**12.0**	**16.0**	**13.0**	**20.0**	**13.0**	**13.0**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**18.0**	---	---	**12.0**	< 5.9	**7.30**	< 5.9	**6.50**	**7.40**	**9.20**	**6.20**	< 6.7	< 6.7	< 6.7	< 6.7	**4.40**	< 6.7	**5.70**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**8.00**
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**13.0**
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.8

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1	MCP Method 1 GW-3	PC-30								PC-31		PC-32		PC-33			PC-34D		
Sample ID			PC-30	PC-30	PC-30	PC-30	PC-30	PC-30	PC-30	PC-30	PC-31	PC-31	PC-32	PC-32	PC-33	PC-33	PC-33	PC-34D	PC-34D	PC-34D
Sample Date			2/1/2023	2/1/2023	4/5/2023	7/25/2023	11/2/2023	2/1/2024	4/18/2024	6/12/2024	3/8/2016	4/27/2017	3/30/2016	4/27/2017	3/30/2016	4/27/2017	6/13/2024	4/14/2016	4/28/2017	6/11/2024
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**49.0**	**54.0**	**45.0**	**41.0**	**45.0**	**31.0**	**46.0**	**61.0**	**140**	**120**	**180**	**49.0**	**240**	**190**	**36.4**	**210**	**140**	**66.5**
Perfluorooctanoic acid (PFOA)	NS	40000000	**39.0**	**45.0**	**35.0**	**26.0**	**37.0**	**27.0**	**26.0**	**44.8**	**110**	**160**	**130**	**54.0**	**250**	**210**	**35.6**	**150**	**130**	**86.9**
Perfluorononanoic acid (PFNA)	NS	40000000	**89.0**	**110**	**65.0**	**45.0**	**69.0**	**61.0**	**22.0**	**25.0**	**79.0**	**100.0**	**140**	**41.0**	**150**	**100.0**	**46.5**	**230**	**140**	**216**
Perfluorodecanoic acid (PFDA)	NS	40000000	**12.0**	**16.0**	**10.00**	**6.90**	< 10	< 10	**6.90**	**6.57**	< 20	< 200	**8.30**	**7.40**	**8.20**	**12.0**	**4.32**	**8.70**	**13.0**	**10.7**
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**100.0**	**110**	**96.0**	**80.0**	**98.0**	**81.0**	**74.0**	**125**	**520**	**1600**	**590**	**270**	**1100**	**900**	**100.0**	**620**	**530**	**145**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**1100**	**1100**	**580**	**390**	**870**	**660**	**380**	**290**	**1200**	**12000**	**1200**	**960**	**2700**	**2100**	**476**	**1400**	**1500**	**1150**
PFAS SUM	20	NS	**1389**	**1435**	**831**	**589**	**1119**	**860**	**555**	**552**	**2049**	**13980**	**2248**	**1381**	**4448**	**3512**	**699**	**2619**	**2453**	**1675**
Perfluorobutanoic Acid (PFBA)	NS	NS	**19.0**	**22.0**	**21.0**	**26.0**	**21.0**	**16.0**	**24.0**	**32.7**	**60.0**	< 200	**99.0**	**20.0**	**120**	**110**	**20.1**	**89.0**	**65.0**	**45.6**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**59.0**	**65.0**	**57.0**	**53.0**	**51.0**	**48.0**	**55.0**	**87.5**	**220**	**230**	**420**	**79.0**	**440**	**380**	**70.1**	**310**	**230**	**87.3**
Perfluorohexanoic acid (PFHxA)	NS	NS	**71.0**	**80.0**	**66.0**	**60.0**	**66.0**	**52.0**	**60.0**	**71.6**	**340**	**370**	**460**	**140**	**480**	**380**	**69.5**	**490**	**350**	**88.8**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**26.0**	**35.0**	**18.0**	**25.0**	**16.0**	**14.0**	**17.0**	**13.7**	**120**	**240**	**4.30**	**19.0**	**9.10**	**11.0**	**17.2**	**14.0**	< 20	**6.76**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 10	< 10	< 4.1	< 4.2	< 10	< 10	< 1.7	< 1.63	< 20	< 200	< 20	< 20	< 20	< 20	< 3.20	< 20	< 20	< 1.44
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 10	< 10	< 4.1	< 4.2	< 10	< 10	< 1.7	< 1.63	< 20	< 200	< 20	< 20	< 20	< 20	< 3.20	< 20	< 20	< 1.44
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 10	< 10	< 4.1	< 4.2	< 10	< 10	< 1.7	< 1.63	< 20	< 200	< 20	< 20	< 20	< 20	< 3.20	< 20	< 20	< 1.44
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 10	< 10	**7.60**	**8.60**	< 10	< 10	**5.20**	**8.80**	**68.0**	**99.0**	**78.0**	**29.0**	**82.0**	**75.0**	**9.39**	**94.0**	**83.0**	**8.84**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	< 10	**11.0**	**9.90**	**9.00**	< 10	< 10	**7.40**	**13.4**	---	---	---	---	---	---	**13.1**	---	---	**14.1**
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**11.0**	**14.0**	**9.40**	**6.60**	< 10	< 10	**4.60**	**4.42**	**64.0**	**260**	**44.0**	**26.0**	**74.0**	**61.0**	**7.65**	**42.0**	**64.0**	**15.6**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	< 10	< 10	**4.60**	< 4.2	< 10	< 10	**2.90**	< 1.63	---	---	---	---	---	---	< 3.20	---	---	< 1.44
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 10	< 10	< 4.1	< 4.2	< 10	< 10	< 1.7	< 1.63	< 20	< 200	< 20	< 20	< 20	< 20	< 3.20	< 20	< 20	< 1.44
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 10	< 10	< 4.1	< 4.2	< 10	< 10	< 1.7	< 1.63	**9.40**	< 200	**28.0**	**340**	**23.0**	**25.0**	**10.00**	< 20	< 20	< 1.44
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	---	---	---	---	---	---	---	< 16.3	< 20	< 200	< 20	< 20	< 20	< 20	< 32.0	< 20	< 20	< 14.4
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	---	---	---	---	---	---	---	< 16.3	< 20	< 200	< 20	< 20	< 20	< 20	< 32.0	< 20	< 20	< 14.4
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	< 10	< 10	< 4.1	< 4.2	< 10	< 10	< 1.7	< 1.63	---	---	---	---	---	---	< 3.20	---	---	< 1.44
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	< 10	< 10	< 4.1	< 4.2	< 10	< 10	< 1.7	< 1.63	---	---	---	---	---	---	< 3.20	---	---	< 1.44
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	---	---	---	---	---	---	---	< 1.63	< 20	< 200	< 20	< 20	< 20	< 20	< 3.20	< 20	< 20	< 1.44
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	---	---	---	---	---	---	---	< 1.63	< 20	< 200	< 20	< 20	< 20	< 20	< 3.20	< 20	< 20	< 1.44
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	< 10	< 10	< 4.1	< 4.2	< 10	< 10	< 1.7	< 6.52	---	---	---	---	---	---	< 12.8	---	---	< 5.78
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**28.0**	**29.0**	**18.0**	**48.0**	**26.0**	**15.0**	**15.0**	**26.9**	**120**	**880**	**650**	**41.0**	**310**	**120**	**25.3**	**210**	**140**	**42.2**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 10	**11.0**	**9.00**	**8.80**	< 10	< 10	**5.40**	**13.2**	**22.0**	**390**	**8.50**	**12.0**	**38.0**	**19.0**	**5.55 J**	**12.0**	**8.70**	**9.94**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	< 10	< 10	< 4.1	< 4.2	< 10	< 10	< 1.7	< 3.26	---	---	---	---	---	---	< 6.40	---	---	< 2.89
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	< 10	< 10	< 4.1	< 4.2	< 10	< 10	< 1.7	< 3.26	---	---	---	---	---	---	< 6.40	---	---	< 2.89
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	< 10	< 10	< 4.1	< 4.2	< 10	< 10	< 1.7	< 3.26	---	---	---	---	---	---	< 6.40	---	---	< 2.89
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	< 10	**11.0**	**9.50**	**9.70**	< 10	< 10	**7.80**	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	**41.0**	**46.0**	**24.0**	**9.80**	**29.0**	**24.0**	**7.40**	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	< 10	< 10	< 4.1	< 4.2	< 10	< 10	< 1.7	< 3.26	---	---	---	---	---	---	< 6.40	---	---	< 2.89
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	< 10	< 10	< 4.1	< 4.2	< 10	< 10	< 1.7	< 6.52	---	---	---	---	---	---	< 12.8	---	---	< 5.78
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	< 10	< 10	< 4.1	< 4.2	< 10	< 10	< 1.7	< 6.52	---	---	---	---	---	---	< 12.8	---	---	< 5.78
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	< 10	< 10	< 4.1	< 4.2	< 10	< 10	< 1.7	< 6.52	---	---	---	---	---	---	< 12.8	---	---	< 5.78
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	< 10	< 10	< 4.1	< 4.2	< 10	< 10	< 1.7	< 6.52	---	---	---	---	---	---	< 12.8	---	---	< 5.78

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1	MCP Method 1	PC-34S								PC-35D			PC-35S		PC-36D				PC-36S
Sample ID	GW-1	GW-3	PC-34S	PC-34S	PC-34S	PC-34S	PC-34S	PC-34S	PC-34S	PC-34S	PC-35D	PC-35D	PC-35D	PC-35S	PC-35S	PC-36D	PC-36D	PC-36D	PC-36D	PC-36S
Sample Date	Standards	Standards	4/14/2016	11/2/2021	4/21/2022	7/27/2022	11/9/2022	1/31/2023	11/2/2023	6/11/2024	4/14/2016	4/28/2017	6/11/2024	4/14/2016	6/11/2024	4/14/2016	4/25/2017	11/2/2023	6/11/2024	4/14/2016
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**100.0**	**87.0**	**77.0**	**74.0**	**98.0**	**110**	**97.0**	**118**	**180**	**97.0**	**82.1**	**170**	**66.1**	**200**	**150**	**23.0**	**53.9**	**12.0**
Perfluorooctanoic acid (PFOA)	NS	40000000	**72.0**	**74.0**	**65.0**	**69.0**	**80.0**	**94.0**	**73.0**	**79.1**	**140**	**97.0**	**83.8**	**130**	**77.8**	**150**	**120**	**17.0**	**48.7**	< 20
Perfluorononanoic acid (PFNA)	NS	40000000	**37.0**	**150**	**100.0**	**130**	**140**	**230**	**120**	**34.3**	**130**	**76.0**	**77.6**	**55.0**	**65.7**	**95.0**	**81.0**	**32.0**	**65.7**	< 20
Perfluorodecanoic acid (PFDA)	NS	40000000	< 20	**7.80**	**7.20**	**8.60**	**16.0**	**17.0**	**13.0**	**3.15**	**8.20**	**13.0**	**8.42**	**13.0**	**9.45**	**12.0**	**8.00**	**6.00**	**8.09**	< 20
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**680**	**160**	**140**	**140**	**130**	**210**	**130**	**332**	**610**	**380**	**128**	**590**	**88.9**	**720**	**570**	**45.0**	**79.6**	**31.0**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**1300**	**1300**	**580**	**710**	**1300**	**1500**	**800**	**253**	**2000**	**1700**	**602**	**1700**	**360**	**3100**	**2500**	**620**	**520**	**35.0**
PFAS SUM	20	NS	**2189**	**1779**	**969**	**1132**	**1764**	**2161**	**1233**	**820**	**3068**	**2363**	**982**	**2658**	**668**	**4277**	**3429**	**743**	**776**	**78.0**
Perfluorobutanoic Acid (PFBA)	NS	NS	**25.0**	**41.0**	**37.0**	**37.0**	**46.0**	**46.0**	**49.0**	**117**	**88.0**	**52.0**	**89.1**	**110**	**63.6**	**100.0**	**87.0**	**9.90**	**27.3**	**7.60**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**80.0**	**130**	**120**	**110**	**120**	**140**	**130**	**301**	**280**	**190**	**134**	**230**	**102**	**260**	**260**	**27.0**	**76.3**	**26.0**
Perfluorohexanoic acid (PFHxA)	NS	NS	**180**	**190**	**160**	**150**	**160**	**190**	**170**	**197**	**450**	**280**	**100.0**	**370**	**68.6**	**470**	**370**	**36.0**	**98.6**	**33.0**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**18.0**	**6.70**	**3.70**	< 6.2	**8.60**	< 10	**8.30**	**6.20**	< 20	< 20	**8.37**	**30.0**	**11.9**	**38.0**	**44.0**	**12.0**	**23.6**	< 20
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 20	< 8	< 0.59	< 8	< 1.9	< 10	< 2	< 1.49	< 20	< 20	< 1.46	< 20	< 1.43	< 20	< 20	< 1.9	< 1.45	< 20
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 20	< 6.4	< 0.48	< 6.4	< 1.9	< 10	< 2	< 1.49	< 20	< 20	< 1.46	< 20	< 1.43	< 20	< 20	< 1.9	< 1.45	< 20
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 20	< 6.8	< 0.37	< 6.8	< 1.9	< 10	< 2	< 1.49	< 20	< 20	< 1.46	< 20	< 1.43	< 20	< 20	< 1.9	< 1.45	< 20
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**59.0**	**24.0**	**23.0**	**25.0**	**20.0**	**25.0**	**22.0**	**9.96**	**85.0**	**51.0**	**6.62**	**48.0**	**4.63**	**71.0**	**70.0**	**5.20**	**9.61**	**6.60**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	**30.0**	---	**22.0**	**27.0**	**20.0**	**18.8**	---	---	**11.0**	---	**7.65**	---	---	**5.90**	**9.54**	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**36.0**	**8.00**	**8.40**	**11.0**	**30.0**	**25.0**	**22.0**	**8.04**	**67.0**	**45.0**	**5.61**	**37.0**	**4.34**	**59.0**	**47.0**	**4.10**	**4.98**	**4.90**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	< 0.64	---	**8.80**	< 10	**4.50**	< 1.49	---	---	< 1.46	---	**0.442 JF**	---	---	**2.50**	< 1.45	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 20	< 6.4	< 0.53	< 6.4	< 1.9	< 10	< 2	< 1.49	< 20	< 20	< 1.46	**4.60**	< 1.43	**4.50**	< 20	< 1.9	< 1.45	< 20
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 20	< 3.6	< 0.81	< 3.6	< 1.9	< 10	< 2	< 1.49	< 20	< 20	**0.950 JF**	< 20	< 1.43	< 20	< 20	< 1.9	**1.60**	< 20
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 20	< 7	---	< 7	---	---	---	< 14.9	< 20	< 20	< 14.6	< 20	< 14.3	< 20	< 20	---	< 14.5	< 20
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 20	< 7.1	---	< 7.1	---	---	---	< 14.9	< 20	< 20	< 14.6	< 20	< 14.3	< 20	< 20	---	< 14.5	< 20
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	< 1.9	< 10	< 2	< 1.49	---	---	< 1.46	---	< 1.43	---	---	< 1.9	< 1.45	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	< 1.9	< 10	< 2	< 1.49	---	---	< 1.46	---	< 1.43	---	---	< 1.9	< 1.45	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 20	< 7	---	< 7	---	---	---	< 1.49	< 20	< 20	< 1.46	< 20	< 1.43	< 20	< 20	---	< 1.45	< 20
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 20	< 7.8	---	< 7.8	---	---	---	< 1.49	< 20	< 20	< 1.46	< 20	< 1.43	< 20	< 20	---	< 1.45	< 20
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	< 1.9	< 10	< 2	< 5.96	---	---	< 5.84	---	< 5.71	---	---	< 1.9	< 5.81	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**18.0**	**77.0**	**65.0**	**80.0**	**51.0**	**65.0**	**86.0**	**6.57**	**130**	**56.0**	**20.8**	**20.0**	**5.71**	**57.0**	**66.0**	**11.0**	**32.4**	**6.90**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 20	**7.00**	**5.40**	**7.70**	**17.0**	**13.0**	**9.80**	**2.62 J**	**20.0**	**16.0**	**6.57**	**6.60**	**4.19 J**	**20.0**	**15.0**	**4.40**	**6.42**	< 20
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	< 1.9	< 10	< 2	< 2.98	---	---	< 2.92	---	< 2.85	---	---	< 1.9	< 2.91	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	< 1.9	< 10	< 2	< 2.98	---	---	< 2.92	---	< 2.85	---	---	< 1.9	< 2.91	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	< 1.9	< 10	< 2	< 2.98	---	---	< 2.92	---	< 2.85	---	---	< 1.9	< 2.91	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	**16.0**	**19.0**	**17.0**	---	---	---	---	---	---	---	---	**3.10**	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	**37.0**	**61.0**	**30.0**	---	---	---	---	---	---	---	---	**14.0**	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	< 1.9	< 10	< 2	< 2.98	---	---	< 2.92	---	< 2.85	---	---	< 1.9	< 2.91	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	< 1.9	< 10	< 2	< 5.96	---	---	< 5.84	---	< 5.71	---	---	< 1.9	< 5.81	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	< 1.9	< 10	< 2	< 5.96	---	---	< 5.84	---	< 5.71	---	---	< 1.9	< 5.81	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	< 1.9	< 10	< 2	< 5.96	---	---	< 5.84	---	< 5.71	---	---	< 1.9	< 5.81	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	< 1.9	< 10	< 2	< 5.96	---	---	< 5.84	---	< 5.71	---	---	< 1.9	< 5.81	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	PC-36S								PC-37			PC-38						
Sample ID			PC-36S 1/11/2019	PC-36S 10/29/2019	PC-36S 10/22/2020	PC-36S 11/3/2021	PC-36S 11/3/2021	PC-36S 11/10/2022	PC-36S 11/2/2023	PC-36S 6/11/2024	PC-37 4/10/2017	PC-37 11/3/2023	PC-37 6/10/2024	PC-38 4/24/2017	PC-38 10/29/2019	PC-38 5/12/2020	PC-38 7/29/2020	PC-38 10/21/2020	PC-38 1/27/2021	PC-38 5/20/2021
Sample Date																				
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	< 7.4	**62.0**	**42.0**	**36.0**	**38.0**	**49.0**	**18.0**	**2.48**	**6.60**	**11.0**	**6.37**	< 20	< 7.1	< 0.37	< 7.1	< 6.7	< 0.51	< 6.7
Perfluorooctanoic acid (PFOA)	NS	40000000	< 3.3	**54.0**	**36.0**	**30.0**	**32.0**	**37.0**	**12.0**	**2.36**	**5.80**	**6.70**	**6.54**	< 20	< 7.4	< 0.23	< 7.4	< 5	< 0.49	< 5
Perfluorononanoic acid (PFNA)	NS	40000000	< 8.7	**80.0**	**57.0**	**65.0**	**71.0**	**120**	**10.00**	**2.03**	**4.80**	**2.40**	**0.852 J**	< 20	< 4.9	< 0.48	< 4.9	< 5.1	< 0.8	< 5.1
Perfluorodecanoic acid (PFDA)	NS	40000000	< 6.1	**11.0**	**11.0**	**8.80**	**11.0**	**13.0**	< 1.9	< 1.43	< 20	< 1.8	< 1.44	< 20	< 4.1	< 0.18	< 4.1	< 3.9	< 0.64	< 3.9
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**38.0**	**120**	**79.0**	**66.0**	**73.0**	**90.0**	**140**	**10.2**	**33.0**	**83.0**	**53.8**	< 20	**6.10**	**2.20**	< 5.2	< 4.4	**1.80**	< 4.4
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**64.0**	**1200**	**700**	**560**	**640**	**760**	**130**	**28.1**	**45.0**	**45.0**	**26.9**	< 20	< 5.2	**4.50**	< 5.2	< 5.7	**2.50**	< 5.7
PFAS SUM	20	NS	**102**	**1527**	**925**	**766**	**865**	**1069**	**310**	**45.2**	**95.2**	**148**	**94.5**	**ND**	**6.10**	**6.70**	**ND**	**ND**	**4.30**	**ND**
Perfluorobutanoic Acid (PFBA)	NS	NS	< 5.5	**27.0**	**22.0**	**17.0**	**19.0**	**28.0**	**8.00**	**1.49 J**	**4.70**	**9.60**	**4.30 J**	< 20	< 7	< 0.45	< 7	< 3.9	< 0.67	< 3.9
Perfluoropentanoic Acid (PFPeA)	NS	NS	**12.0**	**52.0**	**55.0**	**48.0**	**53.0**	**78.0**	**16.0**	**2.68 J**	**10.00**	**22.0**	**9.07**	< 20	< 4.1	< 0.48	< 4.1	< 6.7	< 0.52	< 6.7
Perfluorohexanoic acid (PFHxA)	NS	NS	**13.0**	**79.0**	**62.0**	**63.0**	**69.0**	**91.0**	**17.0**	**2.40**	**7.20**	**21.0**	**11.4**	< 20	< 6.4	**0.34**	< 6.4	< 5.3	< 0.7	< 5.3
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 2.5	**55.0**	**27.0**	**20.0**	**23.0**	**26.0**	< 1.9	< 1.43	< 20	< 1.8	< 1.44	< 20	< 4.3	< 0.38	< 4.3	< 6.2	< 0.77	< 6.2
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 5	< 6.8	< 8	< 8	< 8	< 1.9	< 1.9	< 1.43	< 20	< 1.8	< 1.44	< 20	< 6.8	< 0.25	< 6.8	< 8	< 0.59	< 8
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 3.8	< 6.9	< 6.4	< 6.4	< 6.4	< 1.9	< 1.9	< 1.43	< 20	< 1.8	< 1.44	< 20	< 6.9	< 0.3	< 6.9	< 6.4	< 0.48	< 6.4
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 2.7	< 6.7	< 6.8	< 6.8	< 6.8	< 1.9	< 1.9	< 1.43	< 20	< 1.8	< 1.44	< 20	< 6.7	< 0.16	< 6.7	< 6.8	< 0.37	< 6.8
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 5.4	**6.40**	**11.0**	**11.0**	**12.0**	**12.0**	**12.0**	**2.36**	< 20	**5.40**	**3.42**	< 20	< 5.1	< 0.37	< 5.1	< 5.6	< 0.47	< 5.6
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	---	---	---	**10.00**	**16.0**	**1.50**	---	**8.10**	**4.56**	---	---	< 0.28	---	---	< 0.73	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	---	**7.00**	**10.00**	**8.30**	**8.50**	**18.0**	**3.50**	< 1.43	< 20	**3.10**	**2.06**	< 20	< 3.3	< 0.63	< 3.3	< 6.5	< 0.57	< 6.5
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	---	---	---	**5.80**	< 1.9	< 1.43	---	< 1.8	< 1.44	---	---	< 0.55	---	---	< 0.64	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 6	< 7.2	< 6.4	< 6.4	< 6.4	< 1.9	< 1.9	< 1.43	< 20	< 1.8	< 1.44	< 20	< 7.2	< 0.36	< 7.2	< 6.4	< 0.53	< 6.4
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 3.4	< 6.6	< 3.6	< 3.6	< 3.6	< 1.9	< 1.9	< 1.43	< 20	< 1.8	< 1.44	< 20	< 6.6	< 0.31	< 6.6	< 3.6	< 0.81	< 3.6
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 12	< 6.6	< 7	< 7	< 7	---	---	< 14.3	< 20	---	< 14.4	< 20	< 6.6	---	< 6.6	< 7	---	< 7
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 7.9	< 9.4	< 7.1	< 7.1	< 7.1	---	---	< 14.3	< 20	---	< 14.4	< 20	< 9.4	---	< 9.4	< 7.1	---	< 7.1
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	---	< 1.9	< 1.9	< 1.43	---	< 1.8	< 1.44	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	---	< 1.9	< 1.9	< 1.43	---	< 1.8	< 1.44	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 10	< 9	< 7	< 7	< 7	---	---	< 1.43	< 20	---	< 1.44	< 20	< 9	---	< 9	< 7	---	< 7
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 13	< 3.5	< 7.8	< 7.8	< 7.8	---	---	< 1.43	< 20	---	< 1.44	< 20	< 3.5	---	< 3.5	< 7.8	---	< 7.8
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	---	< 1.9	< 1.9	< 5.71	---	< 1.8	< 5.78	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	< 6.6	**21.0**	**20.0**	**27.0**	**29.0**	**34.0**	< 1.9	< 5.71	< 20	< 1.8	**6.31**	< 20	< 5.9	< 0.43	< 5.9	< 6.5	< 0.59	< 6.5
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	---	**15.0**	**10.00**	**9.40**	**11.0**	**12.0**	< 1.9	< 5.71	< 20	< 1.8	< 5.78	< 20	< 5.9	< 0.47	< 5.9	< 6.7	< 0.75	< 6.7
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	---	< 1.9	< 1.9	< 2.86	---	< 1.8	< 2.89	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	---	< 1.9	< 1.9	< 2.86	---	< 1.8	< 2.89	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	---	< 1.9	< 1.9	< 2.86	---	< 1.8	< 2.89	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	**10.00**	< 1.9	---	---	< 1.8	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	**32.0**	< 1.9	---	---	< 1.8	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	---	< 1.9	< 1.9	< 2.86	---	< 1.8	< 2.89	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	---	< 1.9	< 1.9	< 5.71	---	< 1.8	< 5.78	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	---	< 1.9	< 1.9	< 5.71	---	< 1.8	< 5.78	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	---	< 1.9	< 1.9	< 5.71	---	< 1.8	< 5.78	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	---	< 1.9	< 1.9	< 5.71	---	< 1.8	< 5.78	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	PC-38							PC-39										
Sample ID			PC-38	PC-38	PC-38	PC-38	PC-38	PC-38	PC-38	PC-39	PC-39	PC-39	PC-39	PC-39	PC-39	PC-39	PC-39	PC-39	PC-39	PC-39
Sample Date			7/29/2021	11/1/2021	1/26/2022	11/10/2022	11/3/2023	11/3/2023	6/12/2024	4/24/2017	2/19/2020	11/2/2021	7/28/2022	11/10/2022	2/1/2023	4/4/2023	7/26/2023	2/1/2024	4/18/2024	6/11/2024
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	< 6.7	< 6.7	< 6.7	< 2	< 1.9	< 2	**0.321 J**	**64.0**	**28.0**	< 6.7	< 6.7	**4.00**	< 10	< 4.1	**2.40**	< 4.1	**2.60**	**2.44**
Perfluorooctanoic acid (PFOA)	NS	40000000	< 5	< 5	< 5	< 2	< 1.9	< 2	< 1.42 U	**46.0**	**28.0**	< 5	< 5	**2.20**	< 10	< 4.1	< 1.9	< 4.1	< 1.8	**1.28 J**
Perfluorononanoic acid (PFNA)	NS	40000000	< 5.1	< 5.1	< 5.1	< 2	< 1.9	< 2	< 1.42	**37.0**	**61.0**	**6.90**	**6.00**	**5.20**	< 10	< 4.1	**2.40**	< 4.1	**2.10**	**2.09**
Perfluorodecanoic acid (PFDA)	NS	40000000	< 3.9	< 3.9	< 3.9	< 2	< 1.9	< 2	< 1.42	**7.90**	< 4.1	< 3.9	< 3.9	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 1.59
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	< 4.4	< 4.4	< 4.4	< 2	< 1.9	< 2	**1.64**	**320**	**100.0**	**4.90**	**12.0**	**12.0**	**13.0**	**9.20**	**5.70**	**6.50**	**10.00**	**13.0**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	< 5.7	< 5.7	< 5.7	**5.50**	**4.10**	**3.50**	**3.58**	**1200**	**820**	**140**	**180**	**160**	**180**	**96.0**	**54.0**	**29.0**	**51.0**	**40.3**
PFAS SUM	20	NS	**ND**	**ND**	**ND**	**5.50**	**4.10**	**3.50**	**5.54**	**1675**	**1037**	**152**	**198**	**183**	**193**	**105**	**64.5**	**35.5**	**65.7**	**59.1**
Perfluorobutanoic Acid (PFBA)	NS	NS	< 3.9	< 3.9	< 3.9	< 2	< 1.9	< 2	< 5.70	**36.0**	< 7	< 3.9	< 3.9	**2.30**	< 10	< 4.1	**2.20**	< 4.1	< 1.8	**3.84 J**
Perfluoropentanoic Acid (PFPeA)	NS	NS	< 6.7	< 6.7	< 6.7	< 2	< 1.9	< 2	< 2.85	**95.0**	**27.0**	< 6.7	< 6.7	**5.50**	< 10	< 4.1	**4.40**	< 4.1	**3.60**	**4.40**
Perfluorohexanoic acid (PFHxA)	NS	NS	< 5.3	< 5.3	< 5.3	< 2	< 1.9	< 2	**0.549 J**	**140**	**44.0**	< 5.3	< 5.3	**5.90**	< 10	**5.20**	**3.20**	< 4.1	**4.10**	**3.77**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 6.2	< 6.2	< 6.2	< 2	< 1.9	< 2	< 1.42	**21.0**	**13.0**	< 6.2	**13.0**	**14.0**	**11.0**	**6.30**	**4.60**	< 4.1	**4.40**	**3.24 F**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 8	< 8	< 8	< 2	< 1.9	< 2	< 1.42	< 20	< 6.8	< 8	< 8	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 1.59
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 6.4	< 6.4	< 6.4	< 2	< 1.9	< 2	< 1.42	< 20	< 6.9	< 6.4	< 6.4	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 1.59
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 6.8	< 6.8	< 6.8	< 2	< 1.9	< 2	< 1.42	< 20	< 6.7	< 6.8	< 6.8	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 1.59
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 5.6	< 5.6	< 5.6	< 2	< 1.9	< 2	< 1.42	**42.0**	< 5.1	< 5.6	< 5.6	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	**0.930 J**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	---	< 2	< 1.9	< 2	< 1.42	---	---	---	---	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	**1.23 J**
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	< 6.5	< 6.5	< 6.5	< 2	< 1.9	< 2	< 1.42	**29.0**	< 3.3	< 6.5	< 6.5	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 1.59
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	---	< 2	< 1.9	< 2	< 1.42	---	---	---	---	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 1.59
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 6.4	< 6.4	< 6.4	< 2	< 1.9	< 2	< 1.42	< 20	< 7.2	< 6.4	< 6.4	**2.00**	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 1.59
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 3.6	< 3.6	< 3.6	< 2	< 1.9	< 2	< 1.42	< 20	< 6.6	< 3.6	< 3.6	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 1.59
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 7	< 7	< 7	---	---	---	< 14.2	< 20	< 6.6	< 7	< 7	---	---	---	---	---	---	< 15.9
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 7.1	< 7.1	< 7.1	---	---	---	< 14.2	< 20	< 9.4	< 7.1	< 7.1	---	---	---	---	---	---	< 15.9
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	< 2	< 1.9	< 2	< 1.42	---	---	---	---	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 1.59
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	< 2	< 1.9	< 2	< 1.42	---	---	---	---	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 1.59
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	---	< 7	< 7	---	---	---	< 1.42	< 20	< 9	< 7	< 7	---	---	---	---	---	---	< 1.59
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	---	< 7.8	< 7.8	---	---	---	< 1.42	< 20	< 3.5	< 7.8	< 7.8	---	---	---	---	---	---	< 1.59
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	< 2	< 1.9	< 2	< 5.70	---	---	---	---	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 6.36
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**14.0**	< 6.5	**6.80**	< 2	< 1.9	< 2	< 5.70	**12.0**	< 5.9	< 6.5	< 6.5	< 1.8	**20.0**	**6.20**	**6.30**	< 4.1	**3.30**	< 6.36
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 6.7	< 6.7	< 6.7	< 2	< 1.9	< 2	< 5.70	< 20	< 5.9	< 6.7	< 6.7	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 6.36
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	< 2	< 1.9	< 2	< 2.85	---	---	---	---	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 3.18
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	< 2	< 1.9	< 2	< 2.85	---	---	---	---	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 3.18
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	< 2	< 1.9	< 2	< 2.85	---	---	---	---	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 3.18
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	< 2	< 1.9	< 2	---	---	---	---	---	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	< 2	< 1.9	< 2	---	---	---	---	---	**2.60**	< 10	< 4.1	< 1.9	< 4.1	< 1.8	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	< 2	< 1.9	< 2	< 2.85	---	---	---	---	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 3.18
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	< 2	< 1.9	< 2	< 5.70	---	---	---	---	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 6.36
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	< 2	< 1.9	< 2	< 5.70	---	---	---	---	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 6.36
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	< 2	< 1.9	< 2	< 5.70	---	---	---	---	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 6.36
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	< 2	< 1.9	< 2	< 5.70	---	---	---	---	< 1.8	< 10	< 4.1	< 1.9	< 4.1	< 1.8	< 6.36

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1	MCP Method 1	PC-39D		PFW-1															
Sample ID	GW-1	GW-3	PC-39D	PC-39D	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1
Sample Date	Standards	Standards	7/26/2023	6/11/2024	4/1/2015	10/8/2015	3/8/2016	8/11/2016	4/10/2017	2/9/2018	6/26/2018	1/9/2019	1/9/2019	4/23/2019	4/23/2019	7/22/2019	7/22/2019	10/28/2019	10/28/2019	2/18/2020
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**2.10**	**2.58**	**500**	**580**	**470**	**96.0**	**120**	**350**	**610**	**120**	**140**	**280**	**290**	**450**	**500**	**160**	**150**	**200**
Perfluorooctanoic acid (PFOA)	NS	40000000	< 1.9	**2.53**	**360**	**1800**	**340**	**110**	**160**	**470**	**1500**	**150**	**160**	**310**	**300**	**540**	**560**	**160**	**130**	**230**
Perfluorononanoic acid (PFNA)	NS	40000000	**2.80**	**2.56**	**120**	**1100**	**370**	**420**	**68.0**	**320**	**3900**	**310**	**330**	**380**	**360**	**210**	**210**	**660**	**570**	**230**
Perfluorodecanoic acid (PFDA)	NS	40000000	< 1.9	< 1.58	---	**180**	**48.0**	**36.0**	**17.0**	**74.0**	**150**	**130**	**110**	**130**	**110**	**150**	**160**	**140**	**120**	**210**
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**6.50**	**6.72**	**2200**	**9600**	**1800**	**360**	**850**	**1300**	**7400**	**930**	**960**	**1500**	**1500**	**4200**	**4800**	**1000**	**910**	**1100**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**29.0**	**26.0**	**8400**	**260000**	**7000**	**3500**	**4100**	**8100**	**76000**	**41000**	**38000**	**22000**	**20000**	**24000**	**24000**	**17000**	**16000**	**23000**
PFAS SUM	20	NS	**40.4**	**40.4**	**11580**	**273260**	**10028**	**4522**	**5315**	**10614**	**89560**	**42640**	**39700**	**24600**	**22560**	**29550**	**30230**	**19120**	**17880**	**24970**
Perfluorobutanoic Acid (PFBA)	NS	NS	< 1.9	**1.48 J**	---	**420**	**250**	**38.0**	**75.0**	**200**	**400**	**81.0**	**89.0**	**140**	**140**	**220**	**240**	**110**	**92.0**	**68.0**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**2.40**	**2.76 J**	---	**1600**	**1000**	**130**	**210**	**800**	**2000**	**410**	**420**	**520**	**540**	**870**	**990**	**410**	**360**	**300**
Perfluorohexanoic acid (PFHxA)	NS	NS	**2.90**	**4.27**	---	**2400**	**1100**	**180**	**260**	**690**	**2600**	**510**	**500**	**580**	**580**	**1100**	**1300**	**450**	**380**	**310**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 1.9	< 1.58	---	**840**	**330**	**53.0**	**19.0**	**93.0**	**170**	**95.0**	**98.0**	**100.0**	**87.0**	**120**	**110**	**220**	**190**	**120**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 1.9	< 1.58	---	< 800	< 20	< 20	< 20	< 40	< 50	< 50	< 50	< 34	< 34	< 34	< 34	< 14	< 14	< 34
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 1.9	< 1.58	---	< 800	< 20	< 20	< 20	< 40	< 38	< 38	< 38	< 35	< 35	< 35	< 35	< 14	< 14	< 35
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 1.9	< 1.58	---	< 800	< 20	< 20	< 20	< 40	< 27	< 27	< 27	< 34	< 34	< 34	< 34	< 13	< 13	< 34
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 1.9	< 1.58	**150**	**460**	**120**	**15.0**	**47.0**	**72.0**	**350**	< 54	< 54	**110**	**100.0**	**110**	**120**	**53.0**	**34.0**	< 26
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	< 1.9	**0.702 J**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	< 1.9	< 1.58	---	**3200**	**150**	**22.0**	**29.0**	**74.0**	---	---	---	**100.0**	**100.0**	**81.0**	**78.0**	**120**	**110**	**66.0**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	< 1.9	< 1.58	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 1.9	< 1.58	---	< 800	**19.0**	**8.50**	< 20	< 40	< 60	< 60	< 60	< 36	< 36	< 36	< 36	< 14	< 14	< 36
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 1.9	< 1.58	---	< 800	**19.0**	**31.0**	**28.0**	**27.0**	< 34	< 34	< 34	< 33	< 33	< 33	< 33	< 13	< 13	< 33
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	---	< 15.8	---	< 800	< 20	< 20	< 20	< 40	< 120	< 120	< 120	< 33	< 33	< 33	< 33	< 13	< 13	< 33
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	---	< 15.8	---	< 800	< 20	< 20	< 20	< 40	< 79	< 79	< 79	< 47	< 47	< 47	< 47	< 19	< 19	< 47
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	< 1.9	< 1.58	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	< 1.9	< 1.58	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	---	< 1.58	---	< 800	< 20	< 20	< 20	< 40	< 100	< 100	< 100	< 45	< 45	< 45	< 45	< 18	< 18	< 45
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	---	< 1.58	---	< 800	< 20	< 20	< 20	< 40	< 130	< 130	< 130	< 18	< 18	< 18	< 18	< 7	< 7	< 18
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	< 1.9	< 6.31	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**3.20**	**17.3**	---	**8700**	**1600**	**540**	**250**	**1600**	**10000**	**750**	**750**	**620**	**620**	**2800**	**3100**	**830**	**740**	**710**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 1.9	< 6.31	---	**5100**	**510**	**530**	**510**	**1000**	---	---	---	**2200**	**2000**	**3100**	**3200**	**3200**	**3000**	**3800**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	< 1.9	< 3.16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	< 1.9	< 3.16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	< 1.9	< 3.16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	< 1.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	< 1.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	< 1.9	< 3.16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	< 1.9	< 6.31	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	< 1.9	< 6.31	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	< 1.9	< 6.31	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	< 1.9	< 6.31	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1	MCP Method 1	PFW-1																	
Sample ID	GW-1	GW-3	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1
Sample Date	Standards	Standards	2/18/2020	5/11/2020	7/28/2020	7/28/2020	10/20/2020	10/20/2020	1/26/2021	1/26/2021	5/20/2021	7/28/2021	7/28/2021	11/2/2021	11/2/2021	1/25/2022	1/25/2022	4/21/2022	7/27/2022	11/9/2022
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**200**	**220**	**130**	**160**	**85.0**	**82.0**	**190**	**200**	**250**	**400**	**440**	**200**	**190**	**400**	**390**	**350**	**660**	**380**
Perfluorooctanoic acid (PFOA)	NS	40000000	**220**	**250**	**170**	**210**	**110**	**110**	**140**	**150**	**160**	**300**	**330**	**170**	**170**	**270**	**270**	**260**	**540**	**550**
Perfluorononanoic acid (PFNA)	NS	40000000	**230**	**94.0**	**88.0**	**110**	**84.0**	**80.0**	**86.0**	**94.0**	**66.0**	**44.0**	**50.0**	**75.0**	**69.0**	**120**	**120**	**74.0**	**99.0**	**150**
Perfluorodecanoic acid (PFDA)	NS	40000000	**200**	**81.0**	**73.0**	**89.0**	**38.0**	**37.0**	**72.0**	**69.0**	**45.0**	**24.0**	**28.0**	**66.0**	**54.0**	**38.0**	**36.0**	**36.0**	**38.0**	**37.0**
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**1000**	**890**	**610**	**820**	**480**	**450**	**750**	**750**	**750**	**2400**	**2500**	**840**	**870**	**1100**	**1000**	**1500**	**3300**	**2200**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**22000**	**6000**	**4600**	**5200**	**3900**	**4000**	**3100**	**3400**	**3100**	**3000**	**3300**	**4000**	**3900**	**4800**	**4400**	**4500**	**7600**	**8600**
PFAS SUM	20	NS	**23850**	**7535**	**5671**	**6589**	**4697**	**4759**	**4338**	**4663**	**4371**	**6168**	**6648**	**5351**	**5253**	**6728**	**6216**	**6720**	**12237**	**11917**
Perfluorobutanoic Acid (PFBA)	NS	NS	**67.0**	**57.0**	**56.0**	**68.0**	**50.0**	**46.0**	**110**	**110**	**110**	**210**	**230**	**140**	**140**	**240**	**240**	**160**	**200**	**260**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**290**	**220**	**210**	**260**	**180**	**170**	**340**	**340**	**480**	**830**	**920**	**520**	**520**	**940**	**960**	**630**	**850**	**900**
Perfluorohexanoic acid (PFHxA)	NS	NS	**310**	**230**	**200**	**260**	**200**	**180**	**420**	**420**	**500**	**1000**	**1100**	**540**	**530**	**730**	**720**	**580**	**850**	**830**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**120**	**55.0**	**150**	**230**	**340**	**340**	**260**	**240**	**190**	**250**	**290**	**230**	**220**	**230**	**290**	**87.0**	**160**	**230**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 34	< 2.5	< 6.8	< 6.8	< 8	< 8	< 5.9	< 5.9	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 5.9	< 8	< 1.9
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 35	< 3	< 6.9	< 6.9	< 6.4	< 6.4	< 4.8	< 4.8	< 6.4	< 6.4	< 6.4	< 6.4	< 6.4	< 6.4	< 6.4	< 4.8	< 6.4	< 1.9
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 34	< 1.6	< 6.7	< 6.7	< 6.8	< 6.8	< 3.7	< 3.7	< 6.8	< 6.8	< 6.8	< 6.8	< 6.8	< 6.8	< 6.8	< 3.7	< 6.8	< 1.9
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 26	**30.0**	**27.0**	**31.0**	**18.0**	**17.0**	**50.0**	**50.0**	**65.0**	**98.0**	**110**	**69.0**	**58.0**	**79.0**	**74.0**	**73.0**	**88.0**	**89.0**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	**75.0**	---	---	---	---	**99.0**	**99.0**	---	---	---	---	---	---	---	**160**	---	**160**
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**64.0**	**49.0**	**34.0**	**39.0**	**35.0**	**34.0**	**22.0**	**24.0**	**31.0**	**34.0**	**36.0**	**18.0**	**18.0**	**31.0**	**30.0**	**76.0**	**75.0**	**400**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	< 5.5	---	---	---	---	< 6.4	**8.50**	---	---	---	---	---	---	---	**6.90**	---	**95.0**
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 36	< 3.6	< 7.2	< 7.2	< 6.4	< 6.4	< 5.3	< 5.3	< 6.4	< 6.4	< 6.4	< 6.4	< 6.4	< 6.4	< 6.4	< 5.3	< 6.4	**22.0**
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 33	< 3.1	**7.50**	< 6.6	**5.10**	**5.80**	< 8.1	< 8.1	**5.60**	**5.00**	**4.80**	**13.0**	**5.50**	**6.60**	**7.70**	< 8.1	**10.00**	**21.0**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 33	---	< 6.6	< 6.6	< 7	< 7	---	---	< 7	< 7	< 7	< 7	< 7	< 7	< 7	---	< 7	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 47	---	< 9.4	< 9.4	< 7.1	< 7.1	---	---	< 7.1	< 7.1	< 7.1	< 7.1	< 7.1	< 7.1	< 7.1	---	< 7.1	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**2.30**
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 45	---	< 9	< 9	< 7	< 7	---	---	< 7	---	---	< 7	< 7	< 7	< 7	---	< 7	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 18	---	< 3.5	< 3.5	< 7.8	< 7.8	---	---	< 7.8	---	---	< 7.8	< 7.8	< 7.8	< 7.8	---	< 7.8	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**7.30**
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**710**	**290**	**570**	**700**	**480**	**450**	**340**	**360**	**400**	**1800**	**1900**	**620**	**630**	**1300**	**1200**	**600**	**2400**	**2300**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**3800**	**1200**	**1300**	**1300**	**810**	**760**	**1000**	**990**	**800**	**600**	**660**	**1100**	**1100**	**760**	**720**	**570**	**940**	**920**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**250**
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**620**
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 1.9

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	PFW-1									PFW-2								
Sample ID			PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2
Sample Date			11/9/2022	1/31/2023	4/4/2023	7/25/2023	7/25/2023	11/2/2023	1/31/2024	4/18/2024	6/10/2024	4/1/2015	6/18/2015	10/27/2015	1/21/2016	3/30/2016	8/11/2016	12/8/2016	4/10/2017	11/17/2017
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**330**	**370**	**160**	**420**	**390**	**230**	**330**	**130**	**265**	**630**	**88.0**	**440**	**710**	**460**	**360**	**520**	**410**	**200**
Perfluorooctanoic acid (PFOA)	NS	40000000	**500**	**330**	**200**	**800**	**730**	**370**	**350**	**250**	**391**	**5200**	**250**	**350**	**1100**	**2100**	**590**	**660**	**970**	**400**
Perfluorononanoic acid (PFNA)	NS	40000000	**170**	**210**	**150**	**310**	**290**	**260**	**140**	**96.0**	**92.0**	**750**	**380**	**290**	**560**	**830**	**260**	< 800	**150**	**120**
Perfluorodecanoic acid (PFDA)	NS	40000000	**42.0**	**78.0**	**79.0**	**89.0**	**92.0**	**95.0**	**71.0**	**75.0**	**80.9**	---	**230**	< 800	< 800	**230**	**240**	< 800	**46.0**	**90.0**
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**2000**	**1500**	**910**	**2700**	**2500**	**1000**	**1400**	**1400**	**1770**	**51000**	**1400**	**2700**	**4400**	**13000**	**3200**	**3200**	**4800**	**1800**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**7100**	**15000**	**15000**	**17000**	**15000**	**20000**	**15000**	**11000**	**32600**	**220000**	**200000**	**32000**	**39000**	**120000**	**65000**	**13000**	**17000**	**25000**
PFAS SUM	20	NS	**10142**	**17488**	**16499**	**21319**	**19002**	**21955**	**17291**	**12951**	**35199**	**277580**	**202348**	**35780**	**45770**	**136620**	**69650**	**17380**	**23376**	**27610**
Perfluorobutanoic Acid (PFBA)	NS	NS	**220**	**170**	**58.0**	**180**	**150**	**140**	**190**	**58.0**	**112**	---	**190**	**360**	**520**	**390**	**390**	**680**	**250**	**190**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**780**	**610**	**200**	**650**	**620**	**470**	**700**	**180**	**463**	---	**260**	**560**	**1300**	**1300**	**430**	**1900**	**830**	**610**
Perfluorohexanoic acid (PFHxA)	NS	NS	**730**	**610**	**240**	**940**	**870**	**470**	**650**	**260**	**588**	---	**600**	**1300**	**2300**	**2300**	**960**	**3200**	**1600**	**1000**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**240**	**130**	**42.0**	**170**	**160**	**140**	**100.0**	**38.0**	**39.7**	---	**1900**	**930**	**840**	**2500**	**810**	**480**	**450**	**1100**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 1.8	< 20	< 4.2	< 1.9	< 1.8	< 11	< 10	< 1.9	< 1.49	---	< 800	< 800	< 800	< 800	< 800	< 800	**15.0**	< 200
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 1.8	< 20	< 4.2	< 1.9	< 1.8	< 11	< 10	< 1.9	< 1.49	---	< 800	< 800	< 800	< 800	< 800	< 800	< 100	< 200
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 1.8	< 20	< 4.2	< 1.9	< 1.8	< 11	< 10	< 1.9	< 1.49	---	**99.0**	< 800	< 800	< 800	< 800	**260**	< 100	< 200
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**110**	**63.0**	**25.0**	**81.0**	**81.0**	**63.0**	**72.0**	**30.0**	**72.8**	**460**	< 800	**580**	**640**	**360**	**410**	**350**	**200**	< 200
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	**130**	**160**	**83.0**	**140**	**110**	**130**	**150**	**120**	**190**	---	---	---	---	---	---	---	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**360**	**150**	**130**	**270**	**290**	**290**	**240**	**140**	**278**	---	**370**	**420**	**800**	**2300**	**500**	**400**	**230**	**180**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	**100.0**	**85.0**	**200**	**180**	**170**	**260**	**160**	**140**	**29.5**	---	---	---	---	---	---	---	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	**49.0**	**20.0**	**7.70**	**21.0**	**19.0**	**17.0**	**13.0**	**7.60**	< 1.49	---	< 800	< 800	**250**	**240**	< 800	< 800	< 100	**110**
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	**12.0**	< 20	**17.0**	**17.0**	**17.0**	**11.0**	**12.0**	**14.0**	**16.8**	---	< 800	< 800	< 800	< 800	< 800	< 800	**25.0**	< 200
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	---	---	---	---	---	---	---	---	< 14.9	---	< 2000	< 800	< 800	< 800	< 800	< 800	< 100	< 200
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	---	---	---	---	---	---	---	---	< 14.9	---	< 2000	< 800	< 800	< 800	< 800	< 800	< 100	< 200
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	< 1.8	< 20	< 4.2	< 1.9	< 1.8	< 11	< 10	< 1.9	< 1.49	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	**2.50**	< 20	< 4.2	< 1.9	< 1.8	< 11	< 10	< 1.9	< 1.49	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	---	---	---	---	---	---	---	---	< 1.49	---	< 2000	< 800	< 800	< 800	< 800	< 800	< 100	< 200
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	---	---	---	---	---	---	---	---	< 1.49	---	< 2000	< 800	< 800	< 800	< 800	< 800	< 100	< 200
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	**9.50**	< 20	< 4.2	**5.20**	**5.10**	< 11	< 10	< 1.9	**3.26 J**	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**1700**	**640**	**280**	**4700**	**4700**	**1200**	**950**	**240**	**1080**	---	**820**	**1600**	**5500**	**16000**	**1100**	**4800**	**6200**	**4000**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**900**	**1300**	< 4.2	**2300**	**2200**	**2400**	< 10	**1800**	**1520**	---	**7400**	**1200**	**1300**	**5500**	**3800**	**630**	**740**	**1400**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	< 1.8	< 20	< 4.2	< 1.9	< 1.8	< 11	< 10	< 1.9	< 2.98	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	< 1.8	< 20	< 4.2	< 1.9	< 1.8	< 11	< 10	< 1.9	< 2.98	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	< 1.8	< 20	< 4.2	< 1.9	< 1.8	< 11	< 10	< 1.9	< 2.98	---	---	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	**250**	**110**	**65.0**	**340**	**310**	**190**	**180**	**75.0**	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	**990**	**2600**	**1600**	**2700**	**2500**	**1700**	**1800**	**1900**	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	< 1.8	< 20	< 4.2	< 1.9	< 1.8	< 11	< 10	< 1.9	< 2.98	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	< 1.8	< 20	< 4.2	< 1.9	< 1.8	< 11	< 10	< 1.9	< 5.95	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	< 1.8	< 20	< 4.2	< 1.9	< 1.8	< 11	< 10	< 1.9	< 5.95	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	< 1.8	< 20	< 4.2	< 1.9	< 1.8	< 11	< 10	< 1.9	< 5.95	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	< 1.8	< 20	< 4.2	< 1.9	< 1.8	< 11	< 10	< 1.9	< 5.95	---	---	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	PFW-2																	PFW-3
Sample ID			PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-3
Sample Date			2/9/2018	1/9/2019	10/28/2019	5/11/2020	5/11/2020	10/20/2020	11/2/2021	4/21/2022	4/21/2022	7/27/2022	11/9/2022	1/31/2023	4/4/2023	7/25/2023	1/31/2024	4/18/2024	6/11/2024	4/1/2015
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**200**	**470**	**68.0**	**47.0**	**45.0**	**31.0**	**270**	**250**	**250**	**130**	**180**	**190**	**320**	**150**	**200**	**690**	**212**	**320**
Perfluorooctanoic acid (PFOA)	NS	40000000	**400**	**720**	**74.0**	**50.0**	**48.0**	**30.0**	**170**	**630**	**620**	**190**	**110**	**250**	**730**	**240**	**270**	**1300**	**330**	**140**
Perfluorononanoic acid (PFNA)	NS	40000000	**270**	**110**	**64.0**	**41.0**	**39.0**	**52.0**	**32.0**	**65.0**	**64.0**	**140**	**86.0**	**64.0**	**160**	**160**	**94.0**	**180**	**194**	**150**
Perfluorodecanoic acid (PFDA)	NS	40000000	**130**	**58.0**	**27.0**	**15.0**	**14.0**	**23.0**	**4.30**	**7.80**	**6.80**	**15.0**	**27.0**	< 20	**11.0**	**42.0**	**23.0**	**80.0**	**69.0**	---
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**1400**	**1800**	**230**	**130**	**140**	**71.0**	**650**	**960**	**940**	**470**	**310**	**620**	**1000**	**640**	**570**	**2800**	**521**	**700**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**32000**	**5200**	**2100**	**650**	**690**	**1700**	**1200**	**680**	**630**	**2600**	**1900**	**1600**	**1100**	**3300**	**1500**	**6800**	**3290**	**2700**
PFAS SUM	20	NS	**34400**	**8358**	**2563**	**933**	**976**	**1907**	**2326**	**2593**	**2511**	**3545**	**2613**	**2724**	**3321**	**4532**	**2657**	**11850**	**4616**	**4010**
Perfluorobutanoic Acid (PFBA)	NS	NS	**150**	**350**	**42.0**	**24.0**	**26.0**	**17.0**	**250**	**270**	**260**	**120**	**170**	**130**	**340**	**170**	**160**	**920**	**154**	---
Perfluoropentanoic Acid (PFPeA)	NS	NS	**470**	**1300**	**160**	**79.0**	**78.0**	**45.0**	**1200**	**910**	**880**	**440**	**560**	**600**	**870**	**460**	**760**	**2500**	**476**	---
Perfluorohexanoic acid (PFHxA)	NS	NS	**590**	**2000**	**210**	**120**	**130**	**58.0**	**1300**	**1300**	**1200**	**430**	**610**	**630**	**1100**	**410**	**670**	**3700**	**572**	---
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**1300**	**1800**	**920**	**500**	**620**	**410**	**150**	**400**	**400**	**82.0**	**120**	**200**	**320**	**120**	**140**	**1700**	**1280**	---
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 100	**16.0**	**8.30**	**16.0**	**13.0**	**24.0**	< 8	< 5.9	< 5.9	< 8	**10.00**	< 20	**6.20**	**8.10**	< 10	**8.60**	**10.8**	---
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 100	**6.50**	< 6.9	**5.30**	**4.50**	< 6.4	< 6.4	< 4.8	< 4.8	< 6.4	**5.00**	< 20	< 4.1	**4.30**	< 10	**5.60**	**6.02**	---
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 100	< 2.7	< 6.7	< 0.16	< 0.16	< 6.8	< 6.8	< 3.7	< 3.7	< 6.8	< 1.9	< 20	< 4.1	< 1.8	< 10	< 2	< 1.47	---
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**82.0**	**91.0**	**10.00**	**8.10**	**8.10**	**7.20**	**85.0**	**64.0**	**61.0**	**35.0**	**76.0**	**40.0**	**70.0**	**53.0**	**44.0**	**150**	**31.6**	**160**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	---	**11.0**	**12.0**	---	---	**85.0**	**83.0**	---	**85.0**	**61.0**	**130**	**74.0**	**68.0**	**200**	**56.8**	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**250**	---	**14.0**	**6.50**	**7.30**	**9.40**	< 6.5	**20.0**	**21.0**	**28.0**	**24.0**	< 20	**43.0**	**38.0**	**16.0**	**110**	**36.9**	---
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	---	**9.80**	**12.0**	---	---	< 6.4	< 6.4	---	**22.0**	< 20	**14.0**	**15.0**	< 10	**180**	**11.7**	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	**72.0**	**49.0**	< 7.2	**9.30**	**10.00**	**14.0**	< 6.4	< 5.3	< 5.3	< 6.4	**15.0**	< 20	**20.0**	**19.0**	**14.0**	**52.0**	**7.70**	---
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	**60.0**	**75.0**	**28.0**	**32.0**	**29.0**	**25.0**	**4.60**	**9.00**	**9.80**	**4.20**	**4.70**	< 20	**20.0**	**11.0**	< 10	**71.0**	**68.7**	---
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 100	< 12	< 6.6	---	---	< 7	< 7	---	---	< 7	---	---	---	---	---	---	< 14.7	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 100	< 7.9	< 9.4	---	---	< 7.1	< 7.1	---	---	< 7.1	---	---	---	---	---	---	< 14.7	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	---	---	---	---	---	---	< 1.9	< 20	< 4.1	< 1.8	< 10	< 2	< 1.47	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	---	---	---	---	---	---	< 1.9	< 20	< 4.1	< 1.8	< 10	< 2	**1.44 J**	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 100	< 10	< 9	---	---	< 7	< 7	---	---	< 7	---	---	---	---	---	---	< 1.47	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 100	< 13	< 3.5	---	---	< 7.8	< 7.8	---	---	< 7.8	---	---	---	---	---	---	< 1.47	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	---	---	---	---	---	---	**26.0**	< 20	**30.0**	**15.0**	< 10	**59.0**	**6.32**	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**1700**	**5600**	**400**	**180**	**200**	**45.0**	**2000**	**5000**	**4500**	**870**	**910**	**1500**	**6000**	**1300**	**1400**	**7100**	**1120**	---
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**2200**	---	**220**	**200**	**230**	**130**	**78.0**	**190**	**180**	**350**	**210**	**160**	**310**	**780**	**300**	**3100**	**1710**	---
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	---	---	---	---	---	---	< 1.9	< 20	< 4.1	< 1.8	< 10	< 2	< 2.93	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	---	---	---	---	---	---	< 1.9	< 20	< 4.1	< 1.8	< 10	< 2	< 2.93	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	---	---	---	---	---	---	< 1.9	< 20	< 4.1	< 1.8	< 10	< 2	< 2.93	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	**120**	**87.0**	**350**	**160**	**87.0**	**720**	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	**120**	**150**	**560**	**770**	**350**	**3400**	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	---	---	---	---	---	---	< 1.9	< 20	< 4.1	< 1.8	< 10	< 2	< 2.93	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	---	---	---	---	---	---	< 1.9	< 20	< 4.1	< 1.8	< 10	< 2	< 5.87	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	---	---	---	---	---	---	< 1.9	< 20	< 4.1	< 1.8	< 10	< 2	< 5.87	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	---	---	---	---	---	---	< 1.9	< 20	< 4.1	< 1.8	< 10	< 2	< 5.87	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	---	---	---	---	---	---	< 1.9	< 20	< 4.1	< 1.8	< 10	< 2	< 5.87	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
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4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
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Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	PFW-3				PFW-4			PFW-5										
Sample ID			PFW-3	PFW-3	PFW-3	PFW-3	PFW-4	PFW-4	PFW-4	PFW-5	PFW-5	PFW-5	PFW-5	PFW-5	PFW-5	PFW-5	PFW-5	PFW-5	PFW-5	PFW-5
Sample Date			10/15/2015	4/18/2017	11/17/2017	6/11/2024	4/1/2015	4/11/2017	11/17/2017	3/31/2015	4/11/2017	1/9/2019	4/23/2019	7/22/2019	10/28/2019	2/18/2020	5/11/2020	7/28/2020	10/20/2020	1/26/2021
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**200**	**460**	**170**	**214**	**700**	**340**	**690**	**120**	**130**	**30.0**	**82.0**	**54.0**	**22.0**	**56.0**	**66.0**	**44.0**	**60.0**	**80.0**
Perfluorooctanoic acid (PFOA)	NS	40000000	**170**	**230**	**150**	**133**	**420**	**400**	**1300**	**250**	**170**	**64.0**	**150**	**120**	**26.0**	**88.0**	**120**	**100.0**	**120**	**84.0**
Perfluorononanoic acid (PFNA)	NS	40000000	**160**	**300**	**120**	**43.2**	**110**	**130**	**190**	**40.0**	**28.0**	< 8.7	**25.0**	**16.0**	< 4.9	**11.0**	**22.0**	**15.0**	**29.0**	**32.0**
Perfluorodecanoic acid (PFDA)	NS	40000000	**18.0**	**22.0**	**17.0**	**5.74**	---	< 100	**22.0**	---	**12.0**	< 6.1	**12.0**	**11.0**	< 4.1	**10.00**	**13.0**	**11.0**	**16.0**	**4.70**
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**490**	**1200**	**480**	**479**	**1900**	**1300**	**2400**	**860**	**910**	**240**	**680**	**630**	**260**	**360**	**720**	**610**	**420**	**310**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**3800**	**3400**	**2300**	**310**	**3300**	**4700**	**4500**	**2700**	**2100**	**1100**	**1900**	**1600**	**2400**	**1000**	**1200**	**980**	**1500**	**1200**
PFAS SUM	20	NS	**4838**	**5612**	**3237**	**1185**	**6430**	**6870**	**9102**	**3970**	**3350**	**1434**	**2849**	**2431**	**2708**	**1525**	**2141**	**1760**	**2145**	**1711**
Perfluorobutanoic Acid (PFBA)	NS	NS	**110**	**350**	**160**	**420**	---	**210**	**320**	---	**53.0**	**10.00**	**49.0**	**19.0**	< 7	**17.0**	**27.0**	**21.0**	**21.0**	**47.0**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**360**	**1800**	**560**	**746**	---	**960**	**1500**	---	**220**	**33.0**	**120**	**50.0**	**19.0**	**73.0**	**79.0**	**63.0**	**56.0**	**130**
Perfluorohexanoic acid (PFHxA)	NS	NS	**510**	**1800**	**580**	**378**	---	**630**	**1300**	---	**270**	**49.0**	**150**	**89.0**	**29.0**	**89.0**	**110**	**75.0**	**64.0**	**130**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**67.0**	**61.0**	**42.0**	**17.3**	---	< 100	< 200	---	**24.0**	**3.40**	**24.0**	**20.0**	**7.90**	**34.0**	**20.0**	**33.0**	**77.0**	**25.0**
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 20	< 33	< 20	< 1.60	---	< 100	< 200	---	< 20	< 5	< 6.8	< 6.8	< 6.8	< 6.8	< 2.5	< 6.8	< 8	< 0.59
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 20	< 33	< 20	< 1.60	---	< 100	< 200	---	< 20	< 3.8	< 6.9	< 6.9	< 6.9	< 6.9	< 3	< 6.9	< 6.4	< 0.48
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 20	< 33	< 20	< 1.60	---	< 100	< 200	---	< 20	< 2.7	< 6.7	< 6.7	< 6.7	< 6.7	< 1.6	< 6.7	< 6.8	< 0.37
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**69.0**	**120**	**33.0**	**12.2**	**110**	**52.0**	< 200	< 90	**64.0**	< 5.4	**31.0**	**23.0**	< 5.1	**9.70**	**18.0**	**12.0**	**11.0**	**23.0**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	---	**33.6**	---	---	---	---	---	---	---	---	---	---	**39.0**	---	---	**38.0**
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**73.0**	**80.0**	**22.0**	**4.04**	---	**46.0**	< 200	---	**18.0**	---	**22.0**	**14.0**	**5.40**	< 3.3	**26.0**	**24.0**	**16.0**	**16.0**
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	---	< 1.60	---	---	---	---	---	---	---	---	---	---	< 5.5	---	---	**1.00**
Perfluorodecanesulfonic acid (PFDS)	NS	NS	**6.40**	< 33	< 20	< 1.60	---	< 100	< 200	---	< 20	< 6	< 7.2	< 7.2	< 7.2	< 7.2	< 3.6	< 7.2	< 6.4	< 0.53
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 20	< 33	< 20	**1.33 JF**	---	**18.0**	< 200	---	**69.0**	**100.0**	**100.0**	**130**	**130**	**74.0**	**90.0**	**120**	**110**	**50.0**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 20	< 33	< 20	< 16.0	---	< 100	< 200	---	< 20	< 12	< 6.6	< 6.6	< 6.6	< 6.6	---	< 6.6	< 7	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 20	< 33	< 20	< 16.0	---	< 100	< 200	---	< 20	< 7.9	< 9.4	< 9.4	< 9.4	< 9.4	---	< 9.4	< 7.1	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	< 1.60	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	< 1.60	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 20	< 33	< 20	< 1.60	---	< 100	< 200	---	< 20	< 10	< 9	< 9	< 9	< 9	---	< 9	< 7	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 20	< 33	< 20	< 1.60	---	< 100	< 200	---	< 20	< 13	< 3.5	< 3.5	< 3.5	< 3.5	---	< 3.5	< 7.8	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	< 6.38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**95.0**	**200**	**76.0**	**23.9**	---	**760**	**14000**	---	**200**	**9.10**	**19.0**	**24.0**	**21.0**	**150**	**78.0**	**70.0**	**53.0**	**27.0**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**24.0**	< 33	**21.0**	**4.67 J**	---	< 100	< 200	---	**120**	---	**110**	**100.0**	**28.0**	**140**	**82.0**	**130**	**190**	**100.0**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	< 3.19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	< 3.19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	< 3.19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	< 3.19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	< 6.38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	< 6.38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	< 6.38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	< 6.38	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	PFW-5													PFW-6			
Sample ID			PFW-5	PFW-5	PFW-5	PFW-5	PFW-5	PFW-5	PFW-5	PFW-5	PFW-5	PFW-5	PFW-5	PFW-5	PFW-5	PFW-6	PFW-6	PFW-6	PFW-6
Sample Date			5/19/2021	7/28/2021	11/2/2021	1/25/2022	4/21/2022	7/27/2022	11/9/2022	1/31/2023	4/4/2023	7/25/2023	11/3/2023	1/31/2024	4/18/2024	6/11/2024	4/1/2015	3/8/2016	4/18/2017	1/9/2019
Analyte (ng/L)																			
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**110**	**160**	**76.0**	**240**	**45.0**	**9.20**	**20.0**	**48.0**	**100.0**	**34.0**	**67.0**	**28.0**	**33.0**	**76.8**	**410**	**550**	**23.0**	**220**
Perfluorooctanoic acid (PFOA)	NS	40000000	**120**	**180**	**89.0**	**150**	**73.0**	**14.0**	**24.0**	**110**	**110**	**99.0**	**64.0**	**71.0**	**78.0**	**152**	**350**	**470**	**19.0**	**400**
Perfluorononanoic acid (PFNA)	NS	40000000	**27.0**	**15.0**	**12.0**	**8.60**	**40.0**	**5.50**	**5.50**	**24.0**	**55.0**	**24.0**	**52.0**	**14.0**	**16.0**	**22.5**	**140**	**120**	**18.0**	**140**
Perfluorodecanoic acid (PFDA)	NS	40000000	**7.00**	**6.70**	< 3.9	**5.40**	**11.0**	**13.0**	**7.80**	< 20	**5.10**	**7.70**	**5.50**	< 4.1	**4.80**	**7.24**	---	**9.40**	**8.00**	< 6.1
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**790**	**1100**	**560**	**1300**	**340**	**67.0**	**500**	**580**	**670**	**860**	**370**	**550**	**550**	**1070**	**1600**	**1700**	**110**	**1100**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**1200**	**310**	**370**	**370**	**1000**	**1100**	**2700**	**1100**	**660**	**2200**	**940**	**1500**	**1600**	**1660**	**3400**	**2400**	**850**	**1500**
PFAS SUM	20	NS	**2254**	**1772**	**1107**	**2074**	**1509**	**1209**	**3257**	**1862**	**1600**	**3225**	**1499**	**2163**	**2282**	**2989**	**5900**	**5249**	**1028**	**3360**
Perfluorobutanoic Acid (PFBA)	NS	NS	**68.0**	**100.0**	**44.0**	**170**	**20.0**	**5.70**	**14.0**	< 20	**65.0**	**18.0**	**29.0**	**14.0**	**16.0**	**29.6**	---	**850**	**22.0**	**150**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**210**	**350**	**140**	**540**	**53.0**	**9.40**	**25.0**	**43.0**	**210**	**47.0**	**75.0**	**34.0**	**43.0**	**92.2**	---	**1900**	**69.0**	**520**
Perfluorohexanoic acid (PFHxA)	NS	NS	**240**	**400**	**180**	**540**	**66.0**	**11.0**	**49.0**	**62.0**	**240**	**130**	**89.0**	**57.0**	**69.0**	**191**	---	**1300**	**54.0**	**410**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	**29.0**	**30.0**	**30.0**	**19.0**	**32.0**	**30.0**	**26.0**	< 20	**13.0**	**18.0**	**22.0**	**6.60**	**8.10**	**9.95**	---	< 20	**5.00**	< 2.5
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 8	< 8	< 8	< 8	< 0.59	< 8	< 1.8	< 20	< 4.1	< 1.8	< 4.2	< 4.1	< 1.9	< 1.49	---	< 20	< 20	< 5
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 6.4	< 6.4	< 6.4	< 6.4	< 0.48	< 6.4	< 1.8	< 20	< 4.1	< 1.8	< 4.2	< 4.1	< 1.9	< 1.49	---	< 20	< 20	< 3.8
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 6.8	< 6.8	< 6.8	< 6.8	< 0.37	< 6.8	< 1.8	< 20	< 4.1	< 1.8	< 4.2	< 4.1	< 1.9	< 1.49	---	< 20	< 20	< 2.7
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**54.0**	**71.0**	**26.0**	**100.0**	**17.0**	< 5.6	**24.0**	**23.0**	**56.0**	**38.0**	**26.0**	**21.0**	**22.0**	**56.7**	**100.0**	**100.0**	< 20	**63.0**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	---	---	**29.0**	---	**40.0**	**49.0**	**81.0**	**76.0**	**38.0**	**48.0**	**40.0**	**124**	---	---	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**17.0**	**15.0**	< 6.5	< 6.5	**15.0**	< 6.5	**61.0**	< 20	**26.0**	**110**	**21.0**	**23.0**	**39.0**	**20.0**	---	**70.0**	**9.30**	---
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	---	---	**1.10**	---	**11.0**	< 20	< 4.1	**8.20**	**7.60**	< 4.1	**6.50**	**1.19 J**	---	---	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 6.4	< 6.4	< 6.4	< 6.4	**0.83**	< 6.4	**3.40**	< 20	< 4.1	**2.90**	< 4.2	< 4.1	**2.60**	**0.493 J**	---	< 20	< 20	< 6
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	**39.0**	**48.0**	**12.0**	**30.0**	**22.0**	**25.0**	**6.80**	< 20	**44.0**	**62.0**	**27.0**	**17.0**	**42.0**	**59.6**	---	< 20	< 20	< 3.4
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 7	< 7	< 7	< 7	---	< 7	---	---	---	---	---	---	---	< 14.9	---	< 20	< 20	< 12
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 7.1	< 7.1	< 7.1	< 7.1	---	< 7.1	---	---	---	---	---	---	---	< 14.9	---	< 20	< 20	< 7.9
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	---	---	< 1.8	< 20	< 4.1	< 1.8	< 4.2	< 4.1	< 1.9	< 1.49	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	---	---	< 1.8	< 20	< 4.1	< 1.8	< 4.2	< 4.1	< 1.9	< 1.49	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 7	---	< 7	< 7	---	< 7	---	---	---	---	---	---	---	< 1.49	---	< 20	< 20	< 10
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 7.8	---	< 7.8	< 7.8	---	< 7.8	---	---	---	---	---	---	---	< 1.49	---	< 20	< 20	< 13
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	---	---	< 1.8	< 20	< 4.1	< 1.8	< 4.2	< 4.1	< 1.9	< 5.97	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**73.0**	**99.0**	**33.0**	**91.0**	**11.0**	< 6.5	**3.60**	< 20	**47.0**	**3.10**	**9.70**	**10.00**	**3.30**	**14.3**	---	**3000**	**30.0**	**320**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**140**	**82.0**	**28.0**	**33.0**	**60.0**	**74.0**	**23.0**	< 20	**29.0**	**62.0**	**250**	**9.20**	**17.0**	**65.7**	---	**14.0**	< 20	---
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	---	---	< 1.8	< 20	< 4.1	< 1.8	< 4.2	< 4.1	< 1.9	< 2.99	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	---	---	< 1.8	< 20	< 4.1	< 1.8	< 4.2	< 4.1	< 1.9	< 2.99	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	---	---	< 1.8	< 20	< 4.1	< 1.8	< 4.2	< 4.1	< 1.9	< 2.99	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	**11.0**	< 20	**51.0**	**47.0**	**16.0**	**17.0**	**17.0**	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	**25.0**	**38.0**	**73.0**	**350**	**120**	**38.0**	**61.0**	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	---	---	< 1.8	< 20	< 4.1	< 1.8	< 4.2	< 4.1	< 1.9	< 2.99	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	---	---	< 1.8	< 20	< 4.1	< 1.8	< 4.2	< 4.1	< 1.9	< 5.97	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	---	---	< 1.8	< 20	< 4.1	< 1.8	< 4.2	< 4.1	< 1.9	< 5.97	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	---	---	< 1.8	< 20	< 4.1	< 1.8	< 4.2	< 4.1	< 1.9	< 5.97	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	---	---	< 1.8	< 20	< 4.1	< 1.8	< 4.2	< 4.1	< 1.9	< 5.97	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location Sample ID Sample Date	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	PFW-6 PFW-6 10/20/2020	RW-1 RW-01 4/1/2015	RW-1 RW-01 4/11/2017	SBV-3 SBV-03 11/22/2013	TW4-08 TW-4-08 6/19/2024	TW5-08 TW-5-08 6/19/2024	TW6-08 TW-6-08 6/20/2024	TW64-0 TW-64-0 6/19/2024	TW7-08 TW-7-08 6/19/2024	TW86-5 TW-86-5 6/20/2024	VDT-01 5/31/2024	VDT-01 VDT-01 6/10/2024	VDT-02D VDT-02D 5/31/2024	VDT-02S VDT-02S 5/31/2024	VDT-03 VDT-03 6/10/2024	VDT-04D VDT-04D 5/31/2024	VDT-04S VDT-04S 5/31/2024	VDT-05 VDT-05 6/19/2024
Analyte (ng/L)																				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**170**	**270**	**24.0**	---	**3.03**	**3.58**	**2.24**	**2.08**	**5.25**	< 1.55 U	< 1.82	< 1.56 U	**28.1**	**1.84 J**	**1.30 J**	**0.803 J**	< 1.71	< 1.67 U
Perfluorooctanoic acid (PFOA)	NS	40000000	**70.0**	**240**	**58.0**	**350**	**9.69**	**9.86**	**6.88**	**4.97**	**8.29**	< 1.55 U	**2.22**	< 1.56 U	**54.6**	**5.22**	**3.73**	**2.00**	**0.654 J**	< 1.67 U
Perfluorononanoic acid (PFNA)	NS	40000000	**63.0**	**100.0**	**8.60**	---	**1.62**	**0.904 J**	**1.76**	**0.879 J**	**0.933 J**	< 1.55	< 1.82	< 1.56	**4.50**	**1.64 J**	**0.863 J**	< 1.64	< 1.71	< 1.67
Perfluorodecanoic acid (PFDA)	NS	40000000	**3.90**	---	< 20	---	< 1.60	< 1.56	< 1.51	**0.857 J**	< 1.68	< 1.55	< 1.82	< 1.56	**2.40**	< 1.96	< 1.61	< 1.64	< 1.71	< 1.67
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**150**	**820**	**250**	---	**3.18**	**6.44**	**2.85**	**1.87**	**4.44**	**0.552 J**	**0.766 J**	< 1.56	**25.5**	**36.1**	**17.2**	**2.88**	**2.24**	**1.81**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**810**	**2300**	**1000**	**1100**	**9.87**	**8.76**	**19.8**	**6.59**	**4.45**	**0.987 JF**	**1.20 J**	**0.943 JF**	**54.2**	**49.8**	**65.4**	**6.07**	**0.795 J**	**3.28**
PFAS SUM	20	NS	**1267**	**3730**	**1341**	**1450**	**27.4**	**29.5**	**33.5**	**17.2**	**23.4**	**1.54**	**4.17**	**0.94**	**169**	**94.6**	**88.5**	**11.8**	**3.69**	**5.09**
Perfluorobutanoic Acid (PFBA)	NS	NS	**99.0**	---	< 200	---	**3.35 J**	**6.01 J**	**18.2**	**4.06 J**	**10.2**	**1.91 J**	**0.372 J**	< 6.23	**20.5**	**1.72 J**	< 6.45	**1.03 J**	< 1.71	**1.11 J**
Perfluoropentanoic Acid (PFPeA)	NS	NS	**300**	---	**42.0**	---	**3.46**	**8.58**	**4.47**	**3.65**	**27.0**	< 3.11	< 1.82	< 3.12	**73.7**	**2.58**	< 3.22	**2.08**	< 1.71	< 3.34
Perfluorohexanoic acid (PFHxA)	NS	NS	**290**	---	**54.0**	---	**3.05**	**6.68**	**7.46**	**3.26**	**16.4**	< 1.55	**0.96 J**	< 1.56	**55.0**	**4.55**	**2.31**	**1.34 J**	< 1.71	< 1.67
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 6.2	---	**8.80**	---	< 1.60	< 1.56	**0.952 J**	< 1.49	< 1.68	< 1.55	< 1.82	< 1.56	< 1.99	< 1.96	< 1.61	< 1.64	< 1.71	< 1.67
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 8	---	< 20	---	< 1.60	< 1.56	< 1.51	< 1.49	< 1.68	< 1.55	< 1.82	< 1.56	< 1.99	< 1.96	< 1.61	< 1.64	< 1.71	< 1.67
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 6.4	---	< 20	---	< 1.60	< 1.56	< 1.51	< 1.49	< 1.68	< 1.55	< 1.82	< 1.56	< 1.99	< 1.96	< 1.61	< 1.64	< 1.71	< 1.67
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 6.8	---	< 20	---	< 1.60	< 1.56	< 1.51	< 1.49	< 1.68	< 1.55	< 1.82	< 1.56	< 1.99	< 1.96	< 1.61	< 1.64	< 1.71	< 1.67
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**7.00**	< 90	**6.30**	---	**2.30**	**1.59**	**0.770 J**	**4.98**	**1.60 J**	< 1.55	< 1.82	< 1.56	**6.06**	**2.50**	**0.669 J**	**0.705 J**	< 1.71	< 1.67
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	---	---	---	---	**0.472 J**	**1.11 J**	**0.446 J**	**0.305 J**	**0.782 J**	< 1.55	< 1.82	< 1.56	**4.70**	**1.97**	**0.830 J**	**0.456 J**	< 1.71	< 1.67
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	**9.80**	---	**5.40**	---	< 1.60	**0.491 J**	< 1.51	< 1.49	< 1.68	< 1.55	< 1.82	< 1.56	**2.49**	**0.922 J**	**0.863 J**	< 1.64	< 1.71	< 1.67
Perfluorononanesulfonic Acid (PFNS)	NS	NS	---	---	---	---	< 1.60	< 1.56	< 1.51	< 1.49	< 1.68	< 1.55	< 1.82	< 1.56	< 1.99	< 1.96	< 1.61	< 1.64	< 1.71	< 1.67
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 6.4	---	< 20	---	< 1.60	< 1.56	< 1.51	< 1.49	< 1.68	< 1.55	< 1.82	< 1.56	< 1.99	< 1.96	< 1.61	< 1.64	< 1.71	< 1.67
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 3.6	---	**94.0**	---	< 1.60	< 1.56	< 1.51	< 1.49	< 1.68	< 1.55	< 1.82	< 1.56	< 1.99	< 1.96	< 1.61	< 1.64	< 1.71	< 1.67
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	< 7	---	< 20	---	< 16.0	< 15.6	< 15.1	< 14.9	< 16.8	< 15.5	**NS**	< 15.6	**NS**	**NS**	< 16.1	**NS**	**NS**	< 16.7
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	< 7.1	---	< 20	---	< 16.0	< 15.6	< 15.1	< 14.9	< 16.8	< 15.5	**NS**	< 15.6	**NS**	**NS**	< 16.1	**NS**	**NS**	< 16.7
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	< 1.60	< 1.56	< 1.51	< 1.49	< 1.68	< 1.55	< 1.82	< 1.56	< 1.99	< 1.96	< 1.61	< 1.64	< 1.71	< 1.67
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	< 1.60	< 1.56	< 1.51	< 1.49	< 1.68	< 1.55	< 1.82	< 1.56	< 1.99	< 1.96	< 1.61	< 1.64	< 1.71	< 1.67
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	< 7	---	< 20	---	< 1.60	< 1.56	< 1.51	< 1.49	< 1.68	< 1.55	**NS**	< 1.56	**NS**	**NS**	< 1.61	**NS**	**NS**	< 1.67
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	< 7.8	---	< 20	---	< 1.60	< 1.56	< 1.51	< 1.49	< 1.68	< 1.55	< 1.82	< 1.56	< 1.99	< 1.96	< 1.61	< 1.64	< 1.71	< 1.67
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	< 6.40	< 6.23	< 6.04	< 5.96	< 6.72	< 6.22	< 1.82	< 6.23	< 1.99	< 1.96	< 6.45	< 1.64	< 1.71	< 6.69
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**81.0**	---	**43.0**	---	**7.04**	**27.2**	**4.86 J**	< 5.96	< 6.72	**2.29 J**	< 1.82	< 6.23	< 1.99	**4.24**	**16.7**	< 1.64	< 1.71	**2.57 J**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	**7.90**	---	**27.0**	---	< 6.40	< 6.23	< 6.04	< 5.96	< 6.72	< 6.22	< 1.82	< 6.23	< 1.99	< 1.96	**2.98 J**	< 1.64	< 1.71	< 6.69
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	< 3.20	< 3.12	< 3.02	< 2.98	< 3.36	< 3.11	**NS**	< 3.12	**NS**	**NS**	< 3.22	**NS**	**NS**	< 3.34
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	< 3.20	< 3.12	< 3.02	< 2.98	< 3.36	< 3.11	**NS**	< 3.12	**NS**	**NS**	< 3.22	**NS**	**NS**	< 3.34
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	< 3.20	< 3.12	< 3.02	< 2.98	< 3.36	< 3.11	**NS**	< 3.12	**NS**	**NS**	< 3.22	**NS**	**NS**	< 3.34
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	< 3.20	< 3.12	< 3.02	< 2.98	< 3.36	< 3.11	**NS**	< 3.12	**NS**	**NS**	< 3.22	**NS**	**NS**	< 3.34
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	< 6.40	< 6.23	< 6.04	< 5.96	< 6.72	< 6.22	< 1.82	< 6.23	< 1.99	< 1.96	< 6.45	< 1.64	< 1.71	< 6.69
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	< 6.40	< 6.23	< 6.04	< 5.96	< 6.72	< 6.22	< 1.82	< 6.23	< 1.99	< 1.96	< 6.45	< 1.64	< 1.71	< 6.69
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	< 6.40	< 6.23	< 6.04	< 5.96	< 6.72	< 6.22	< 1.82	< 6.23	< 1.99	< 1.96	< 6.45	< 1.64	< 1.71	< 6.69
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	< 6.40	< 6.23	< 6.04	< 5.96	< 6.72	< 6.22	< 1.82	< 6.23	< 1.99	< 1.96	< 6.45	< 1.64	< 1.71	< 6.69

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.
8. Samples collected from the VDT wells in May 2024 were collected on behalf of MassDEP by Verdantas.
9. Monitoring well locations MW-8-90, MW-36D, MW-37, MW-37D, and PC-4 are not shown on the Site Plan. The locations and status of these wells are unknown at this time.
10. SBV-3 is a passive biovent located on the facility property.

TABLE 1A
PFAS6 ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location Sample ID Sample Date	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	WS-101	
			WS-101 11/11/2022	WS-101 6/13/2024
Analyte (ng/L)				
Perfluoroheptanoic acid (PFHpA)	NS	40000000	< 1.9	< 1.50 U
Perfluorooctanoic acid (PFOA)	NS	40000000	< 1.9	< 1.50 U
Perfluorononanoic acid (PFNA)	NS	40000000	< 1.9	< 1.50
Perfluorodecanoic acid (PFDA)	NS	40000000	< 1.9	< 1.50
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	< 1.9	**1.12 J**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	< 1.9	**1.98**
PFAS SUM	20	NS	**ND**	**3.10**
Perfluorobutanoic Acid (PFBA)	NS	NS	< 1.9	< 6.01
Perfluoropentanoic Acid (PFPeA)	NS	NS	< 1.9	< 3.01
Perfluorohexanoic acid (PFHxA)	NS	NS	< 1.9	< 1.50
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 1.9	< 1.50
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 1.9	< 1.50
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 1.9	< 1.50
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 1.9	< 1.50
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 1.9	< 1.50
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	< 1.9	< 1.50
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	< 1.9	< 1.50
Perfluorononanesulfonic Acid (PFNS)	NS	NS	< 1.9	< 1.50
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 1.9	< 1.50
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 1.9	< 1.50
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	---	< 15.0
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	---	< 15.0
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	< 1.9	< 1.50
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	< 1.9	< 1.50
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	---	< 1.50
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	---	< 1.50
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	< 1.9	< 6.01
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	< 1.9	< 6.01
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 1.9	< 6.01
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	< 1.9	< 3.01
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	< 1.9	< 3.01
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	< 1.9	< 3.01
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	< 1.9	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	< 1.9	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	< 1.9	< 3.01
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	< 1.9	< 6.01
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	< 1.9	< 6.01
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	< 1.9	< 6.01
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	< 1.9	< 6.01

TABLE 1B
GROUNDWATER SCREENING POINT ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1 GW-1 Standards	MCP Method 1 GW-3 Standards	GWS-01		GWS-02		GWS-03		GWS-04		GWS-05	GWS-06		GWS-07		GWS-08	
Sample Date			8/11/2022	8/11/2022	8/11/2022	8/11/2022	8/12/2022	8/12/2022	10/4/2022	10/4/2022	10/4/2022	10/5/2022	10/5/2022	10/5/2022	10/5/2022	10/4/2022	10/4/2022
Analyte (ng/L)																	
Perfluoroheptanoic acid (PFHpA)	NS	40000000	< 0.51	< 0.51	< 0.51	< 0.51	< 0.51	< 0.51	**72.0**	< 4.1	**35.0**	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	**4.90**
Perfluorooctanoic acid (PFOA)	NS	40000000	**1.30**	**0.70**	**0.55**	**0.66**	**0.84**	**1.00**	**64.0**	< 4.1	**27.0**	< 4.1	< 4.2	**20.0**	**9.20**	< 4.1	< 4.1
Perfluorononanoic acid (PFNA)	NS	40000000	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	**110**	< 4.1	**69.0**	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
Perfluorodecanoic acid (PFDA)	NS	40000000	< 0.64	< 0.64	< 0.64	< 0.64	< 0.64	< 0.64	**12.0**	< 4.1	**26.0**	< 4.1	< 4.2	**7.00**	< 4.1	< 4.1	< 4.1
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**1.00**	**1.10**	**0.86**	**4.50**	**0.75**	**1.20**	**120**	< 4.1	**110**	< 4.1	< 4.2	< 4.2	< 4.1	**4.30**	**7.70**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	< 0.43	**3.10**	< 0.43	**4.50**	< 0.43	**1.70**	**1300**	**7.50**	**760**	< 4.1	**5.60**	**8.70**	**15.0**	**22.0**	**37.0**
PFAS SUM	20	NS	**2.30**	**4.90**	**1.41**	**9.66**	**1.59**	**3.90**	**1678**	**7.50**	**1027**	**ND**	**5.60**	**35.7**	**24.2**	**26.3**	**49.6**
Perfluorobutanoic Acid (PFBA)	NS	NS	**0.74**	**1.40**	< 0.67	**2.00**	< 0.67	< 0.67	**34.0**	< 4.1	**20.0**	< 4.1	< 4.2	**4.30**	< 4.1	< 4.1	< 4.1
Perfluoropentanoic Acid (PFPeA)	NS	NS	< 0.52	< 0.52	**0.76**	**1.50**	**2.10**	< 0.52	**89.0**	< 4.1	**48.0**	< 4.1	< 4.2	**9.20**	< 4.1	**5.10**	**6.90**
Perfluorohexanoic acid (PFHxA)	NS	NS	< 0.7	< 0.7	< 0.7	< 0.7	**1.10**	**2.60**	**110**	< 4.1	**55.0**	< 4.1	< 4.2	**27.0**	**9.70**	< 4.1	**7.30**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 0.77	< 0.77	< 0.77	< 0.77	< 0.77	< 0.77	**30.0**	< 4.1	**230**	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 4.2	< 4.1	< 4.2	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 4.2	< 4.1	< 4.2	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 0.37	< 0.37	< 0.37	< 0.37	< 0.37	< 0.37	< 4.2	< 4.1	< 4.2	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 0.47	< 0.47	< 0.47	**0.65**	< 0.47	< 0.47	**11.0**	< 4.1	**7.40**	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	< 0.73	< 0.73	< 0.73	< 0.73	< 0.73	< 0.73	**13.0**	< 4.1	**10.00**	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	< 0.57	< 0.57	< 0.57	< 0.57	< 0.57	< 0.57	**17.0**	< 4.1	**6.70**	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
Perfluorononanesulfonic Acid (PFNS)	NS	NS	< 0.64	< 0.64	< 0.64	< 0.64	< 0.64	< 0.64	**6.90**	< 4.1	**15.0**	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53	< 4.2	< 4.1	**18.0**	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 0.81	< 0.81	< 0.81	< 0.81	< 0.81	< 0.81	< 4.2	< 4.1	**7.90**	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	---	---	---	---	---	---	< 4.2	< 4.1	< 4.2	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	---	---	---	---	---	---	< 4.2	< 4.1	< 4.2	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	---	---	---	---	---	---	< 4.2	< 4.1	< 4.2	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	**41.0**	< 4.1	**8.60**	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	**12.0**	< 4.1	**11.0**	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	---	---	---	---	---	---	< 4.2	< 4.1	< 4.2	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	---	---	---	---	---	---	< 4.2	< 4.1	< 4.2	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	---	---	---	---	---	---	< 4.2	< 4.1	< 4.2	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	---	---	---	---	---	---	**12.0**	< 4.1	< 4.2	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	---	---	---	---	---	---	**42.0**	< 4.1	**27.0**	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	---	---	---	---	---	---	< 4.2	< 4.1	< 4.2	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	---	---	---	---	---	---	< 4.2	< 4.1	**4.90**	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	---	---	---	---	---	---	< 4.2	< 4.1	< 4.2	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	---	---	---	---	---	---	< 4.2	< 4.1	< 4.2	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	---	---	---	---	---	---	< 4.2	< 4.1	< 4.2	< 4.1	< 4.2	< 4.2	< 4.1	< 4.1	< 4.1

Notes:
1. Samples were collected by BETA on the dates indicated
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.

TABLE 1B
GROUNDWATER SCREENING POINT ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1	MCP Method 1	GWS-09		GWS-10		GWS-11		GWS-12		GWS-13		GWS-14		GWS-15	
Sample Date	GW-1 Standards	GW-3 Standards	10/5/2022	10/5/2022	10/5/2022	10/5/2022	10/5/2022	10/5/2022	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023
Analyte (ng/L)																
Perfluoroheptanoic acid (PFHpA)	NS	40000000	< 1.8	< 4.1	< 4.2	< 4.1	**24.0**	**14.0**	< 10	< 10	< 10	< 10	< 10	**21.0**	< 10	< 9.9
Perfluorooctanoic acid (PFOA)	NS	40000000	< 1.8	< 4.1	< 4.2	**6.70**	**16.0**	**15.0**	< 10	< 10	< 10	< 10	< 10	**36.0**	< 10	**19.0**
Perfluorononanoic acid (PFNA)	NS	40000000	< 1.8	< 4.1	< 4.2	< 4.1	**19.0**	**21.0**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
Perfluorodecanoic acid (PFDA)	NS	40000000	< 1.8	< 4.1	< 4.2	< 4.1	**6.60**	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	< 1.8	< 4.1	< 4.2	< 4.1	**72.0**	**31.0**	< 10	**11.0**	< 10	< 10	< 10	**200**	< 10	**45.0**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	< 1.8	**4.20**	< 4.2	**7.80**	**300**	**460**	< 10	**14.0**	< 10	< 10	< 10	**680**	< 10	**330**
PFAS SUM	20	NS	**ND**	**4.20**	**ND**	**14.5**	**438**	**541**	**ND**	**25.0**	**ND**	**ND**	**ND**	**937**	**ND**	**394**
Perfluorobutanoic Acid (PFBA)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	**6.80**	< 4.1	< 10	< 10	< 10	< 10	< 10	**17.0**	< 10	< 9.9
Perfluoropentanoic Acid (PFPeA)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	**20.0**	**11.0**	< 10	< 10	< 10	< 10	< 10	**47.0**	< 10	**17.0**
Perfluorohexanoic acid (PFHxA)	NS	NS	< 1.8	< 4.1	< 4.2	**4.60**	**25.0**	**14.0**	< 10	< 10	< 10	< 10	< 10	**49.0**	< 10	**15.0**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 1.8	**7.60**	< 4.2	< 4.1	**48.0**	**19.0**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	**4.80**	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	**6.20**	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
Perfluorononanesulfonic Acid (PFNS)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	**4.10**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	**7.60**	**6.80**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	< 1.8	< 4.1	< 4.2	< 4.1	< 4.2	< 4.1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9

Notes:
1. Samples were collected by BETA on the dates indicated
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.

TABLE 1B
GROUNDWATER SCREENING POINT ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1	MCP Method 1	GWS-16			GWS-17		GWS-18		GWS-19		GWS-20			GWS-21		GWS-22	
Sample Date	GW-1 Standards	GW-3 Standards	1/10/2023	1/10/2023	1/10/2023	1/10/2023	1/10/2023	1/10/2023	1/10/2023	1/10/2023	1/10/2023	1/10/2023	1/10/2023	1/10/2023	4/11/2023	4/11/2023	4/11/2023	4/11/2023
Analyte (ng/L)																		
Perfluoroheptanoic acid (PFHpA)	NS	40000000	**15.0**	**20.0**	**24.0**	< 4	**16.0**	**42.0**	**13.0**	**390**	**39.0**	< 4.1	< 4.1	< 4.1	**40.0**	**5.80**	< 4.1	< 4.1
Perfluorooctanoic acid (PFOA)	NS	40000000	**11.0**	**13.0**	**16.0**	< 4	**14.0**	**42.0**	**13.0**	**230**	**29.0**	< 4.1	< 4.1	< 4.1	**50.0**	**11.0**	< 4.1	**7.20**
Perfluorononanoic acid (PFNA)	NS	40000000	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	**18.0**	**4.00**	< 4.1	< 4.1	< 4.1	**5.50**	< 4.1	< 4.1	< 4.1
Perfluorodecanoic acid (PFDA)	NS	40000000	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	**9.50**	**9.50**	**8.60**	**4.00**	**19.0**	**73.0**	**26.0**	**13.0**	**21.0**	< 4.1	< 4.1	< 4.1	**5.70**	**17.0**	< 4.1	**61.0**
Perfluorooctanesulfonic acid (PFOS)	NS	500000	**5.50**	**12.0**	< 4	**9.00**	**28.0**	**80.0**	**53.0**	**4.90**	**41.0**	< 4.1	**5.70**	< 4.1	**34.0**	**14.0**	< 4.1	**360**
PFAS SUM	20	NS	**41.0**	**54.5**	**48.6**	**13.0**	**77.0**	**237**	**105**	**656**	**134**	**ND**	**5.70**	**ND**	**135**	**47.8**	**ND**	**428**
Perfluorobutanoic Acid (PFBA)	NS	NS	**16.0**	**19.0**	**26.0**	< 4	**16.0**	**38.0**	**11.0**	**150**	**19.0**	< 4.1	< 4.1	< 4.1	**54.0**	**5.30**	< 4.1	< 4.1
Perfluoropentanoic Acid (PFPeA)	NS	NS	**48.0**	**59.0**	**76.0**	**7.70**	**43.0**	**110**	**27.0**	**430**	**52.0**	< 4.1	**8.20**	**9.80**	**150**	**9.10**	< 4.1	**9.60**
Perfluorohexanoic acid (PFHxA)	NS	NS	**34.0**	**41.0**	**49.0**	**5.50**	**27.0**	**75.0**	**21.0**	**350**	**38.0**	< 4.1	**5.70**	**6.10**	**89.0**	**10.00**	< 4.1	**9.70**
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 4	< 4	< 4	< 4	< 4	**7.40**	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	< 4	< 4	< 4	< 4	< 4	**4.80**	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	< 4	< 4	< 4	< 4	< 4	**10.00**	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluorononanesulfonic Acid (PFNS)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	**45.0**	**52.0**	**78.0**	< 4	**56.0**	**190**	**32.0**	**2100**	**230**	< 4.1	**7.30**	< 4.1	**40.0**	< 4.1	< 4.1	< 4.1
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	**6.10**	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	< 4	< 4	< 4	< 4	< 4	< 4.1	< 4	< 4.1	< 4	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1

Notes:
1. Samples were collected by BETA on the dates indicated
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.

TABLE 1B
GROUNDWATER SCREENING POINT ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	MCP Method 1	MCP Method 1	GWS-23		GWS-24			GWS-25		GWS-26		GWS-27	
Sample Date	GW-1 Standards	GW-3 Standards	4/11/2023	4/11/2023	4/12/2023	4/12/2023	4/12/2023	4/12/2023	4/12/2023	4/12/2023	4/12/2023	4/12/2023	4/12/2023
Analyte (ng/L)													
Perfluoroheptanoic acid (PFHpA)	NS	40000000	< 4.1	**22.0**	**4.20**	**7.20**	< 4.1	**9.90**	**7.50**	< 4.1	**20.0**	< 4.1	< 4.1
Perfluorooctanoic acid (PFOA)	NS	40000000	< 4.1	**15.0**	< 4.1	**6.50**	< 4.1	**5.10**	**5.10**	< 4.1	**6.90**	< 4.1	< 4.1
Perfluorononanoic acid (PFNA)	NS	40000000	< 4.1	< 4.1	**5.20**	**24.0**	**4.70**	**24.0**	**23.0**	< 4.1	**18.0**	< 4.1	< 4.1
Perfluorodecanoic acid (PFDA)	NS	40000000	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluorohexanesulfonic acid (PFHxS)	NS	500000	< 4.1	**9.10**	< 4.1	**7.90**	**6.90**	**22.0**	**18.0**	< 4.1	**32.0**	< 4.1	< 4.1
Perfluorooctanesulfonic acid (PFOS)	NS	500000	< 4.1	**5.40**	**22.0**	**73.0**	**19.0**	**140**	**100.0**	< 4.1	**25.0**	**13.0**	**7.80**
PFAS SUM	20	NS	**ND**	**51.5**	**31.4**	**119**	**30.6**	**201**	**154**	**ND**	**102**	**13.0**	**7.80**
Perfluorobutanoic Acid (PFBA)	NS	NS	< 4.1	**28.0**	< 4.1	**7.20**	< 4.1	< 4.1	**11.0**	< 4.1	**7.50**	< 4.1	< 4.1
Perfluoropentanoic Acid (PFPeA)	NS	NS	< 4.1	**90.0**	**5.30**	**6.20**	< 4.1	**11.0**	**15.0**	< 4.1	**22.0**	< 4.1	< 4.1
Perfluorohexanoic acid (PFHxA)	NS	NS	< 4.1	**57.0**	**5.10**	**8.80**	< 4.1	**9.30**	**12.0**	< 4.1	**22.0**	< 4.1	< 4.1
Perfluoroundecanoic Acid (PFUnA)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluorododecanoic acid (PFDoDA)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluorotetradecanoic acid (PFTeDA)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluorobutanesulfonic acid (PFBS)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	**5.00**	< 4.1	< 4.1
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	**5.90**	< 4.1	< 4.1
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluorononanesulfonic Acid (PFNS)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluorodecanesulfonic acid (PFDS)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluorooctane Sulfonamide (PFOSA)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	NS	---	---	---	---	---	---	---	---	---	---	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	NS	---	---	---	---	---	---	---	---	---	---	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	NS	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	NS	< 4.1	**15.0**	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1

Notes:
1. Samples were collected by BETA on the dates indicated
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard.
6. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.

TABLE 2
SOIL ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sampling Event	MCP Method 1 S-1/GW-1, S-2/GW-1,& S-3/GW-1 Standards	Initial Soil Assessments - 2015																			
Location ID		B-01		B-02			B-03			B-04				B-05		B-06		B-07		B-08	
Sample ID		B1 4-8	B1 8-12	B2 4-8	B2 8-12 CAP	B2 8-12 WT	B3 0-4 UPPER	B3 0-4 LOWER	B3 4-8	B4 0-4	B4 4-8	B4 8-12 CAP	B4 8-12 WT	B5 6-10 UPPER	B5 6-10 LOWER	B6 6-10 UPPER	B6 6-10 LOWER	B7 2-6	B7 8-12	B8 6-10	
Sample Depth		4-8 ft	8-12 ft	4-8 ft	8-12 ft	8-12 ft	0-4 ft	0-4 ft	4-8 ft	0-4 ft	4-8 ft	8-12 ft	8-12 ft	6-10 ft	6-10 ft	6-10 ft	6-10 ft	2-6 ft	8-12 ft	6-10 ft	
Sample Date		3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	
PFAS Compounds (ug/kg)																					
Perfluoroheptanoic acid (PFHpA)	**0.50**	**0.036 J**	**0.018 J**	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	**1.1 J**	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	**0.087 J**	*< 5.0*	*< 5.0*	**0.051 J**	< 0.10	
Perfluorooctanoic acid (PFOA)	**0.72**	**0.098 J**	**0.060 J**	**1.7 J**	*< 5.0*	**3.6 J**	*< 5.0*	*< 5.0*	**2.3 J**	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	**3.1 J**	*< 5.0*	**0.25**	*< 5.0*	*< 5.0*	**0.061 J**	**0.042 J**	
Perfluorononanoic acid (PFNA)	**0.32**	**0.16**	**0.15**	**44.0**	**1.6 J**	**2.6 J**	*< 5.0*	**5.30**	**3.6 J**	*< 5.0*	*< 5.0*	**0.78 J**	*< 5.0*	**8.40**	**0.90 J**	**0.50**	*< 5.0*	*< 5.0*	**0.045 J**	**0.032 J**	
Perfluorodecanoic acid (PFDA)	**0.30**	< 0.10	**0.027 J**	**1.1 J**	*< 5.0*	*< 5.0*	*< 5.0*	**1.0 J**	**21.0**	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	**0.045 J**	*< 5.0*	*< 5.0*	**0.087 J**	**0.050 J**	
Perfluorohexanesulfonic acid (PFHxS)	**0.30**	**0.10**	**0.061 J**	**2.5 J**	**2.1 J**	**40.0**	*< 5.0*	**4.5 J**	**24.0**	*< 5.0*	**2.4 J**	**1.8 J**	*< 5.0*	*< 5.0*	*< 5.0*	**0.45**	*< 5.0*	**1.9 J**	**0.46**	**0.20**	
Perfluorooctanesulfonic acid (PFOS)	**2.00**	***2.00***	**1.90**	**100**	**42.0**	**290**	**240**	**610**	**4900**	**18.0**	**36.0**	**60.0**	**43.0**	**350**	**35.0**	**11.0**	**17.0**	**120**	**5.70**	**4.60**	
Perfluorobutanoic Acid (PFBA)	NS	**0.042 J**	< 0.10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**0.018 J**	< 5.0	< 5.0	**0.032 J**	< 0.10	
Perfluoropentanoic Acid (PFPeA)	NS	< 0.10	**0.059 J**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**1.9 J**	< 5.0	< 5.0	< 5.0	**1.1 J**	< 5.0	< 5.0	**0.033 J**	< 5.0	< 5.0	**0.18**	< 0.10	
Perfluorohexanoic acid (PFHxA)	NS	**0.030 J**	**0.030 J**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**11.0**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**0.040 J**	< 5.0	< 5.0	**0.33**	**0.032 J**	
Perfluoroundecanoic Acid (PFUnA)	NS	< 0.10	< 0.10	**3.9 J**	**26.0**	**70.0**	**3.5 J**	**17.0**	**240.00**	**11.0**	< 5.0	< 5.0	**3.4 J**	< 5.0	< 5.0	< 0.10	**2.3 J**	< 5.0	**0.28**	**0.10**	
Perfluorododecanoic acid (PFDoDA)	NS	**0.021 J**	**0.021 J**	< 5.0	< 5.0	< 5.0	**5.40**	**6.00**	< 5.0	**1.7 J**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**0.023 J**	< 5.0	< 5.0	**0.032 J**	**0.023 J**	
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	< 0.10	< 0.10	< 5.0	< 5.0	**3.5 J**	**27.0**	**40.0**	**5.0 J**	**33.0**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 0.10	< 5.0	< 5.0	**0.052 J**	< 0.10	
Perfluorotetradecanoic acid (PFTeDA)	NS	**0.016 J**	**0.015 J**	< 5.0	< 5.0	< 5.0	**5.20**	**5.80**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**0.016 J**	< 5.0	< 5.0	< 0.10	< 0.10	
Perfluorobutanesulfonic acid (PFBS)	NS	< 0.10	< 0.10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 0.10	< 5.0	< 5.0	< 0.10	< 0.10	
Perfluoropentanesulfonic Acid (PFPeS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Perfluoroheptanesulfonic acid (PFHpS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Perfluorononanesulfonic Acid (PFNS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Perfluorodecanesulfonic acid (PFDS)	NS	< 0.10	< 0.10	< 5.0	< 5.0	**2.4 J**	**18.0**	**16.0**	**17.0**	**5.70**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 0.10	< 5.0	**6.00**	**0.31**	**0.054 J**	
Perfluorooctane Sulfonamide (PFOSA)	NS	< 0.10	< 0.10	< 5.0	**0.70 J**	**8.00**	**9.00**	**17.0**	**8.90**	**12.0**	< 5.0	< 5.0	< 5.0	**57.0**	**13.0**	**0.17**	**4.8 J**	**6.00**	**2.20**	**0.046 J**	
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Perfluoro-1-butanesulfonamide (FBSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in micrograms per kilogram (ug/kg; parts per billion (ppb)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard. Underlined and italicized values indicate the analyte was not detected, but the reporting limit was above the Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. Some of the hotspot excavation confirmatory samples were treated with RemBind to evaluate its effectiveness. These samples are identified as "TREATED" in the sample naming convention.
8. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.

TABLE 2
SOIL ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sampling Event	MCP Method 1 S-1/GW-1, S-2/GW-1,& S-3/GW-1 Standards	Initial Soil Assessments - 2015								Hotspot Area Assessments - 2016											
Location ID		B-09			B-10			B-12		HS-01			HS-02			HS-03			HS-04		
Sample ID		B9 0-4	B9 4-8	B9 8-12	B10 0-4	B10 4-8	B10 8-12 UPPER	B12 6-10 UPPER	B12 6-10 LOWER	HS-1 0-4	HS-1 4-8	HS-1 8-12	HS-2 0-4	HS-2 4	HS-2 6	HS-3 0-4	HS-3 4-8	HS-3 8-12	HS-4 4	HS-4 8	HS-4 8-12
Sample Depth		0-4 ft	4-8 ft	8-12 ft	0-4 ft	4-8 ft	8-12 ft	6-10 ft	6-10 ft	0-4 ft	4-8 ft	8-12 ft	0-4 ft	4 ft	6 ft	0-4 ft	4-8 ft	8-12 ft	4 ft	8 ft	8-12 ft
Sample Date		3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	3/15/2015	1/21/2016	1/21/2016	1/21/2016	1/21/2016	1/21/2016	1/21/2016	1/21/2016	1/21/2016	1/21/2016	1/21/2016	1/21/2016	1/21/2016
PFAS Compounds (ug/kg)																					
Perfluoroheptanoic acid (PFHpA)	**0.50**	< 5.0	< 5.0	< 0.10	< 5.0	< 5.0	**0.11**	**0.67**	**0.43**	< 1.0	< 1.0	< 1.0	< 1.0	**0.24 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.41 J**
Perfluorooctanoic acid (PFOA)	**0.72**	**3.0 J**	< 5.0	< 0.10	< 5.0	**2.1 J**	**0.22**	**0.98**	**0.40**	**0.38 J**	**1.00**	**0.23 J**	**0.30 J**	**0.57 J**	**0.21 J**	< 1.0	< 1.0	< 1.0	**0.34 J**	**0.66 J**	**0.77 J**
Perfluorononanoic acid (PFNA)	**0.32**	**3.7 J**	< 5.0	< 0.10	< 5.0	**8.30**	**0.35**	**0.016 J**	**0.015 J**	**0.77 J**	**1.20**	**0.47 J**	**1.10**	**1.60**	**0.81 J**	**0.42 J**	**0.49 J**	**0.39 J**	**0.84 J**	**1.00**	**1.00**
Perfluorodecanoic acid (PFDA)	**0.30**	< 5.0	< 5.0	< 0.10	< 5.0	< 5.0	**0.028 J**	< 0.10	< 0.10	**0.72 J**	**3.00**	**0.54 J**	**2.00**	**2.60**	**1.20**	< 1.0	**1.10**	**1.40**	**1.70**	**1.00**	**0.62 J**
Perfluorohexanesulfonic acid (PFHxS)	**0.30**	**10.00**	**1.3 J**	**0.074 J**	< 5.0	**13.0**	**0.42**	**21.0**	**6.00**	**1.70**	**5.30**	**1.40**	**2.40**	**4.60**	**1.50**	**0.59 J**	**0.88 J**	**0.71 J**	**1.40**	**4.50**	**6.40**
Perfluorooctanesulfonic acid (PFOS)	**2.00**	**820**	**14.0**	**0.30**	**20.0**	**93.0**	**3.00**	**0.28**	**0.45**	**160**	**830**	**140**	**160**	**610**	**450**	**11.0**	**310**	**370**	**330**	**280**	**140**
Perfluorobutanoic Acid (PFBA)	NS	< 5.0	< 5.0	< 0.10	< 5.0	< 5.0	**0.10 J**	**0.14**	**0.12**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Perfluoropentanoic Acid (PFPeA)	NS	**1.5 J**	< 5.0	< 0.10	< 5.0	**3.2 J**	**0.32**	**0.54**	**0.41**	< 1.0	< 1.0	< 1.0	< 1.0	**0.46 J**	**0.30 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Perfluorohexanoic acid (PFHxA)	NS	**0.78 J**	< 5.0	< 0.10	< 5.0	**2.1 J**	**0.32**	**1.00**	**0.90**	**0.24 J**	**0.42 J**	**0.45 J**	**0.41 J**	**0.70 J**	**0.42 J**	**0.31 J**	**0.24 J**	**0.28 J**	**0.34 J**	**0.32 J**	**0.57 J**
Perfluoroundecanoic Acid (PFUnA)	NS	< 5.0	< 5.0	< 0.10	**2.8 J**	< 5.0	**0.034 J**	< 0.10	< 0.10	**13.0**	**66.0**	**10.00**	**30.0**	**200.00**	**62.0**	**1.20**	**13.0**	**10.00**	**37.0**	**18.0**	**20.0**
Perfluorododecanoic acid (PFDoDA)	NS	< 5.0	< 5.0	**0.018 J**	< 5.0	< 5.0	**0.021 J**	**0.020 J**	**0.017 J**	**3.20**	**1.30**	**0.32 J**	**3.70**	**8.00**	< 1.0	**2.50**	< 1.0	**0.92 J**	**0.49 J**	**0.32 J**	**0.50 J**
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	< 5.0	< 5.0	< 0.10	**2.1 J**	< 5.0	< 0.10	< 0.10	< 0.10	**30.0**	**6.10**	**1.30**	**7.30**	**7.20**	**0.44 J**	**3.60**	**0.65 J**	**8.90**	**1.60**	**1.30**	**4.50**
Perfluorotetradecanoic acid (PFTeDA)	NS	< 5.0	< 5.0	**0.014 J**	< 5.0	< 5.0	**0.014 J**	**0.013 J**	< 0.10	**0.79 J**	**0.29 J**	< 1.0	**0.37 J**	**0.25 J**	< 1.0	**2.70**	< 1.0	**0.64 J**	< 1.0	< 1.0	< 1.0
Perfluorobutanesulfonic acid (PFBS)	NS	< 5.0	< 5.0	< 0.10	< 5.0	< 5.0	< 0.10	**0.18**	**0.18**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Perfluoropentanesulfonic Acid (PFPeS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	---	---	---	---	---	---	---	---	**0.61 J**	**1.80**	**0.56 J**	**0.85 J**	**0.92 J**	**0.75 J**	< 1.0	**0.55 J**	< 1.0	**0.65 J**	**2.80**	**5.50**
Perfluorononanesulfonic Acid (PFNS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	< 5.0	< 5.0	< 0.10	< 5.0	< 5.0	< 0.10	< 0.10	< 0.10	**7.80**	**7.80**	**0.90 J**	**12.0**	**28.0**	**1.50**	**7.50**	**1.20**	**2.20**	**1.50**	**0.75 J**	**1.10**
Perfluorooctane Sulfonamide (PFOSA)	NS	**3.3 J**	< 5.0	< 0.10	**3.1 J**	< 5.0	**0.015 J**	**0.19**	**0.020 J**	**5.50**	**3.50**	**0.48 J**	**7.30**	**11.0**	**0.64 J**	**5.70**	**0.55 J**	**1.40**	**2.30**	**0.85 J**	**1.50**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	---	---	---	---	---	---	---	---	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	---	---	---	---	---	---	---	---	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	---	---	---	---	---	---	---	---	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	---	---	---	---	---	---	---	---	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	---	---	---	---	---	---	---	---	**1.40**	**2.40**	**1.10**	**0.60 J**	**1.10**	**0.34 J**	**0.42 J**	**0.68 J**	**0.49 J**	**2.20**	**4.30**	**7.30**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	---	---	---	---	---	---	---	---	**13.0**	**31.0**	**7.80**	**28.0**	**49.0**	**20.0**	**3.40**	**13.0**	**20.0**	**43.0**	**28.0**	**15.0**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

TABLE 2
SOIL ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sampling Event	MCP Method 1 S-1/GW-1, S-2/GW-1,& S-3/GW-1 Standards	Hotspot Area Assessments - 2016								Hotspot Excavation Sidewall and Bottom Samples							
Location ID		HS-05			HS-06				HS-07	FTA-HOTSPOT-1		FTA-HOTSPOT-B03-EX		FTA-HOTSPOT-NW	FTA-HOTSPOT-HOR		FTA-HOTSPOT-HS07-EX
Sample ID		HS-5 4-8TOP	HS-5 4-8MID	HS-5 8-12	HS-6 0-4	HS-6 4-8	HS-6 8-12	HS-6 12	HS-7 3-4	BOT HOLE 1	BOT HOLE 1 TREATED	B3 SIDEWAY WEST	B3 SIDE WALL WEST TREATED	NW LIFT BOT	SOIL HORIZON DEEP WEST	SOIL HORIZON DEEP WEST TREATED	H7 SIDE WALL
Sample Depth		4-8 ft	4-8 ft	8-12 ft	0-4 ft	4-8 ft	8-12 ft	12 ft	3-4 ft								
Sample Date		1/21/2016	1/21/2016	1/21/2016	1/21/2016	1/21/2016	1/21/2016	1/21/2016	1/21/2016	1/25/2017	1/25/2017	1/25/2017	1/26/2017	1/25/2017	1/25/2017	1/26/2017	1/25/2017
PFAS Compounds (ug/kg)																	
Perfluoroheptanoic acid (PFHpA)	**0.50**	< 1.0	< 1.0	< 1.0	**0.46 J**	< 1.0	< 1.0	**0.41 J**	< 1.0	**0.21 J**	< 10	< 10	< 10	**3.1 J**	**0.45 J**	< 10	**0.25 J**
Perfluorooctanoic acid (PFOA)	**0.72**	**0.25 J**	**0.22 J**	**0.22 J**	**3.70**	**0.62 J**	**0.89 J**	< 1.0	**0.50 J**	**0.68 J**	< 10	< 10	< 10	**4.2 J**	**1.80**	< 10	**0.22 J**
Perfluorononanoic acid (PFNA)	**0.32**	**1.30**	**0.68 J**	**0.75 J**	**5.70**	**1.30**	**0.51 J**	**0.30 J**	**1.70**	**0.56 J**	< 10	**1.8 J**	< 10	**4.0 J**	**1.60**	< 10	**0.20 J**
Perfluorodecanoic acid (PFDA)	**0.30**	**1.20**	**1.60**	**1.20**	**1.90**	**1.20**	**1.10**	**0.47 J**	**16.0**	< 1.0	< 10	**3.7 J**	< 10	**5.8 J**	**2.10**	< 10	**0.43 J**
Perfluorohexanesulfonic acid (PFHxS)	**0.30**	**1.70**	**1.30**	**1.50**	**9.20**	**3.70**	**4.50**	**1.40**	**5.30**	**4.50**	< 10	**4.6 J**	**6.3 J**	**20.0**	**8.30**	< 10	**1.00**
Perfluorooctanesulfonic acid (PFOS)	**2.00**	**240**	**350**	**380**	**410**	**500**	**330**	**170**	**2000**	**110**	**56.0**	**460**	**300**	**970**	**280**	**150**	**180**
Perfluorobutanoic Acid (PFBA)	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 10	< 10	< 10	< 1.0	< 10	< 1.0
Perfluoropentanoic Acid (PFPeA)	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.99 J**	**0.42 J**	< 1.0	< 10	< 10	**2.7 J**	**2.2 J**	**0.65 J**	< 10	< 1.0
Perfluorohexanoic acid (PFHxA)	NS	**0.33 J**	**0.26 J**	< 1.0	**1.40**	**0.32 J**	**0.37 J**	**3.10**	**0.95 J**	**0.23 J**	< 10	< 10	< 10	**3.6 J**	**0.86 J**	< 10	**0.38 J**
Perfluoroundecanoic Acid (PFUnA)	NS	**28.0**	**13.0**	**1.60**	**26.0**	**15.0**	**5.40**	**13.0**	**260.00**	**13.0**	**6.2 J**	**180.00**	**32.0**	**150.00**	**47.0**	**32.0**	**260.00**
Perfluorododecanoic acid (PFDoDA)	NS	< 1.0	**0.35 J**	< 1.0	**0.33 J**	< 1.0	< 1.0	< 1.0	< 1.0	**1.10**	< 10	**7.1 J**	< 10	< 10	**4.80**	< 10	**4.10**
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	**0.98 J**	**1.50**	**0.56 J**	**45.0**	**0.34 J**	**0.40 J**	< 1.0	**0.34 J**	**7.10**	**4.4 J**	**50.0**	**3.5 J**	< 10	**41.0**	**7.8 J**	**24.0**
Perfluorotetradecanoic acid (PFTeDA)	NS	< 1.0	< 1.0	< 1.0	**0.23 J**	< 1.0	< 1.0	< 1.0	< 1.0	**0.26 J**	< 10	< 10	< 10	< 10	**1.70**	< 10	< 1.0
Perfluorobutanesulfonic acid (PFBS)	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.54 J**	< 1.0	< 1.0	< 10	< 10	< 10	**2.6 J**	< 1.0	< 10	< 1.0
Perfluoropentanesulfonic Acid (PFPeS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	**0.70 J**	**1.10**	**0.77 J**	**1.30**	**4.30**	**1.10**	< 1.0	**0.96 J**	**1.50**	< 10	< 10	< 10	**4.3 J**	**1.10**	< 10	**0.35 J**
Perfluorononanesulfonic Acid (PFNS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	**0.72 J**	**0.85 J**	**0.42 J**	**1.30**	**0.75 J**	**0.46 J**	**1.40**	**2.80**	**2.20**	< 10	**16.0**	**8.0 J**	**18.0**	**5.40**	< 10	**17.0**
Perfluorooctane Sulfonamide (PFOSA)	NS	**1.00**	**0.93 J**	< 1.0	**5.90**	**0.71 J**	**0.24 J**	**0.76 J**	**1.20**	**2.00**	< 10	**9.1 J**	**3.0 J**	**5.9 J**	**8.50**	< 10	**10.00**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 10	< 10	< 10	< 1.0	< 10	< 1.0
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 10	< 10	< 10	< 1.0	< 10	< 1.0
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 10	< 10	< 10	< 1.0	< 10	< 1.0
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 10	< 10	< 10	< 1.0	< 10	< 1.0
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	**2.20**	**1.80**	**1.60**	**11.0**	**4.60**	**6.30**	**1.90**	**1.90**	**3.80**	< 10	**5.2 J**	**4.1 J**	**13.0**	**10.00**	< 10	**0.85 J**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	**23.0**	**27.0**	**26.0**	**18.0**	**27.0**	**21.0**	**8.30**	**350.00**	**6.80**	**6.9 J**	**87.0**	**40.0**	**130.00**	**39.0**	**16.0**	**29.0**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in micrograms per kilogram (ug/kg; parts per billion (ppb)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard. Underlined and italicized values indicate the analyte was not detected, but the reporting limit was above the Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. Some of the hotspot excavation confirmatory samples were treated with RemBind to evaluate its effectiveness. These samples are identified as "TREATED" in the sample naming convention.
8. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.

TABLE 2
SOIL ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sampling Event	MCP Method 1 S-1/GW-1, S-2/GW-1,& S-3/GW-1 Standards	Hotspot Excavation Sidewall and Bottom Samples				Test Pit Samples - 2019										Soil Borings - 2020					
Location ID		FTA-HOTSPOT-LIFT		FTA-HOTSPOT-2		TP-01		TP-02		TP-03		TP-04		TP-05		SB-101					
Sample ID		BOT 5FT LIFT	BOT 5 FT LIFT TREATED	BOT HOLE 2	BOT HOLE 2 TREATED	TP-1 (0-4)	TP-1 (10)	TP-2 (0-4)	TP-2 (10)	TP-3 (4)	TP-3 (10)	TP-4 (5)	TP-4 (8)	TP-5 (4)	TP-5 (10)	SB-101 (S1)	SB-101 (S2)	SB-101 (S3)	SB-101 (S4)	SB-101 (S5)	SB-101 (S7)
Sample Depth		0-4 ft	TREATED	0-4 ft	TREATED	0-4 ft	10 ft	0-4 ft	10 ft	4 ft	10 ft	5 ft	8 ft	4 ft	10 ft	4-5 ft	5-7 ft	10-11 ft	11-12 ft	12-14 ft	16-18 ft
Sample Date		1/25/2017	1/25/2017	1/26/2017	1/26/2017	8/6/2019	8/6/2019	8/6/2019	8/6/2019	8/6/2019	8/6/2019	8/6/2019	8/6/2019	8/6/2019	8/6/2019	5/20/2020	5/20/2020	5/20/2020	5/20/2020	5/20/2020	5/20/2020
PFAS Compounds (ug/kg)																					
Perfluoroheptanoic acid (PFHpA)	**0.50**	**0.35 J**	< 10	**0.31 J**	< 10	**1.60**	**1.10**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	**0.31 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Perfluorooctanoic acid (PFOA)	**0.72**	**1.20**	< 10	**2.20**	< 10	**6.10**	**5.00**	< 1.0	**0.22 J**	< 1.0	< 1.0	**0.49 J**	**0.38 J**	**3.5 J**	**2.40**	< 1.0	**0.16 J**	**0.29 J**	< 1.0	< 1.0	< 1.0
Perfluorononanoic acid (PFNA)	**0.32**	**1.80**	< 10	**3.30**	< 10	**6.00**	**0.50 J**	< 1.0	< 1.0	< 1.0	< 1.0	**0.38 J**	**0.32 J**	**30.0**	**2.30**	< 1.0	< 1.0	**0.16 J**	< 1.0	< 1.0	< 1.0
Perfluorodecanoic acid (PFDA)	**0.30**	**1.60**	< 10	**2.00**	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	**4.60**	**5.10**	**0.63 J**	< 1.0	< 1.0	< 1.0
Perfluorohexanesulfonic acid (PFHxS)	**0.30**	**3.20**	< 10	**4.40**	< 10	**1.70**	**1.20**	**0.48 J**	**0.60 J**	< 1.0	< 1.0	***0.55 J***	***0.45 J***	< 10	**4.20**	**0.59 J**	**1.00**	**0.84 J**	**0.18 J**	< 1.0	< 1.0
Perfluorooctanesulfonic acid (PFOS)	**2.00**	**270**	**45.0**	**180**	**32.0**	**360**	**8.60**	**3.10**	**15.0**	**1.10**	**1.10**	**17.0**	**14.0**	**530**	**4.30**	**21.0**	**19.0**	**40.0**	**5.90**	**2.10**	**0.38 J**
Perfluorobutanoic Acid (PFBA)	NS	< 1.0	< 10	< 1.0	< 10	**0.47 J**	**0.21 J**	< 1.0	< 1.0	< 1.0	< 1.0	**0.22 J**	**0.23 J**	< 10	**0.25 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Perfluoropentanoic Acid (PFPeA)	NS	**0.27 J**	< 10	**0.67 J**	< 10	**0.79 J**	**0.41 J**	< 1.0	< 1.0	< 1.0	< 1.0	**0.23 J**	**0.26 J**	< 10	**0.31 J**	< 1.0	**0.17 J**	**0.35 J**	**0.36 J**	< 1.0	< 1.0
Perfluorohexanoic acid (PFHxA)	NS	**0.38 J**	< 10	**0.87 J**	< 10	**0.48 J**	**0.32 J**	< 1.0	< 1.0	< 1.0	< 1.0	**0.16 J**	**0.18 J**	< 10	**0.30 J**	< 1.0	**0.40 J**	**0.74 J**	**0.50 J**	< 1.0	< 1.0
Perfluoroundecanoic Acid (PFUnA)	NS	**28.0**	**4.1 J**	**41.0**	**4.2 J**	< 1.0	< 1.0	**0.33 J**	**0.90 J**	**7.40**	**2.50**	**0.38 J**	**0.44 J**	< 10	< 1.0	**11.0**	**1.70**	**210.00**	**61.0**	**19.0**	**0.53 J**
Perfluorododecanoic acid (PFDoDA)	NS	**3.90**	< 10	**9.10**	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	**2.80**	**0.51 J**	< 1.0	< 1.0
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	**26.0**	**5.4 J**	**37.0**	**5.2 J**	< 1.0	< 1.0	< 1.0	**0.24 J**	**0.58 J**	**0.23 J**	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	**41.0**	**7.70**	**2.60**	< 1.0
Perfluorotetradecanoic acid (PFTeDA)	NS	**1.80**	< 10	**4.00**	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	**0.32 J**	< 1.0	< 1.0	< 1.0
Perfluorobutanesulfonic acid (PFBS)	NS	< 1.0	< 10	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Perfluoropentanesulfonic Acid (PFPeS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	**0.58 J**	< 10	**1.00**	< 10	**3.60**	**1.80**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	**1.20**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Perfluorononanesulfonic Acid (PFNS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	**7.00**	< 10	**7.20**	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	**0.38 J**	< 1.0	< 1.0	< 1.0
Perfluorooctane Sulfonamide (PFOSA)	NS	**5.50**	< 10	**6.80**	< 10	< 1.0	< 1.0	**1.40**	**2.70**	**2.80**	**4.30**	**7.50**	**17.0**	< 10	< 1.0	< 1.0	< 1.0	**2.50**	**0.26 J**	< 1.0	< 1.0
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	< 1.0	< 10	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	< 1.0	< 10	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	< 1.0	< 10	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	< 1.0	< 10	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	**5.20**	< 10	**5.80**	< 10	**13.0**	**21.0**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**3.4 J**	**15.0**	< 1.0	< 1.0	**1.90**	**0.80 J**	**0.33 J**	< 1.0
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	**36.0**	**8.9 J**	**44.0**	**8.5 J**	**7.30**	**0.56 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**5.2 J**	< 1.0	**24.0**	**17.0**	**11.0**	**6.80**	**1.40**	< 1.0
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in micrograms per kilogram (ug/kg; parts per billion (ppb)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard. Underlined and italicized values indicate the analyte was not detected, but the reporting limit was above the Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. Some of the hotspot excavation confirmatory samples were treated with RemBind to evaluate its effectiveness. These samples are identified as "TREATED" in the sample naming convention.
8. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.

TABLE 2
SOIL ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sampling Event	MCP Method 1 S-1/GW-1, S-2/GW-1,& S-3/GW-1 Standards	Soil Borings - 2020																Soil Borings - 2021		
Location ID		SB-102					SB-103		SB-104									SB-201		SB-202
Sample ID		SB-102 (S12)	SB-102 (S13)	SB-102 (S15)	SB-102 (S17)	SB-102 (S20)	SB-103 (S20)	SB-103 (S21)	SB-104 (S22)	SB-104 (S24)	SB-104 (S26)	SB-104 (S27)	SB-104 (S28)	SB-104 (S29)	SB-104 (S30)	SB-104 (S32)	SB-104 (S34)	SB-201 (0-1')	SB-201 (4-6')	SB-202 (2-4')
Sample Depth		2-4 ft	8-12 ft	16-20 ft	23-24 ft	28-30 ft	7-9 ft	9-11 ft	0-2 ft	4-6 ft	8-10 ft	10-12 ft	12-14 ft	14-16 ft	16-18 ft	20-22 ft	24-26 ft	0-1 ft	4-6 ft	2-4 ft
Sample Date		5/20/2020	5/20/2020	5/20/2020	5/20/2020	5/20/2020	5/21/2020	5/21/2020	5/21/2020	5/21/2020	5/21/2020	5/21/2020	5/21/2020	5/21/2020	5/21/2020	5/21/2020	5/21/2020	1/26/2021	1/26/2021	1/26/2021
PFAS Compounds (ug/kg)																				
Perfluoroheptanoic acid (PFHpA)	**0.50**	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	**0.33**	< 0.17	**1.00**
Perfluorooctanoic acid (PFOA)	**0.72**	**0.18 J**	**0.19 J**	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	***0.36***	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	**5.60**	**0.86**	**10.00**
Perfluorononanoic acid (PFNA)	**0.32**	**0.83 J**	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	**1.80**	***0.27***	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	**0.36**	< 0.27	**1.40**
Perfluorodecanoic acid (PFDA)	**0.30**	**0.48 J**	**0.53 J**	*< 1.0*	*< 1.0*	*< 1.0*	**0.41**	*< 1.0*	**0.81**	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	< 0.24	< 0.24	**0.94**
Perfluorohexanesulfonic acid (PFHxS)	**0.30**	**1.40**	**0.77 J**	*< 1.0*	*< 1.0*	*< 1.0*	**0.63**	*< 1.0*	***0.22***	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	**3.90**	**0.49**	**19.0**
Perfluorooctanesulfonic acid (PFOS)	**2.00**	**12.0**	**37.0**	**1.00**	< 1.0	< 1.0	**13.0**	**2.60**	**100**	**77.0**	**11.0**	**12.0**	**0.97**	**1.10**	< 1.0	< 1.0	< 1.0	**26.0**	**0.89**	**170**
Perfluorobutanoic Acid (PFBA)	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.24	< 0.24	**0.33**
Perfluoropentanoic Acid (PFPeA)	NS	**0.15 J**	< 1.0	< 1.0	< 1.0	< 1.0	**0.14**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.29**	< 0.23	**0.88**
Perfluorohexanoic acid (PFHxA)	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.20**	< 0.16	**2.80**
Perfluoroundecanoic Acid (PFUnA)	NS	**99.0**	**120.00**	**1.60**	**0.23 J**	< 1.0	**94.0**	**37.0**	**0.39**	< 1.0	**0.52**	**1.80**	**1.40**	**0.42**	< 1.0	< 1.0	< 1.0	< 0.25	< 0.25	**1.10**
Perfluorododecanoic acid (PFDoDA)	NS	**2.40**	**0.62 J**	< 1.0	< 1.0	< 1.0	**0.49**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.19	< 0.19	< 0.19
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	**47.0**	**6.90**	< 1.0	< 1.0	< 1.0	**2.10**	**0.96**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.22	< 0.22	< 0.22
Perfluorotetradecanoic acid (PFTeDA)	NS	**0.29 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.3	< 0.3	< 0.3
Perfluorobutanesulfonic acid (PFBS)	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.17	< 0.17	< 0.17
Perfluoropentanesulfonic Acid (PFPeS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.17	< 0.17	**0.67**
Perfluorononanesulfonic Acid (PFNS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	**0.42 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.27	< 0.27	< 0.27
Perfluorooctane Sulfonamide (PFOSA)	NS	**1.20**	**0.63 J**	< 1.0	< 1.0	< 1.0	**0.35**	< 1.0	**0.24**	< 1.0	< 1.0	**0.58**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.2	< 0.2	**11.0**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.22	< 0.22	< 0.22
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.29	< 0.29	< 0.29
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.31	< 0.31	< 0.31
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.39	< 0.39	< 0.39
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	**0.19 J**	**1.70**	< 1.0	< 1.0	< 1.0	**0.36**	**0.13**	**0.37**	**0.19**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.3	< 0.3	< 0.3
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	**3.40**	**12.0**	< 1.0	< 1.0	< 1.0	**3.60**	**2.30**	**21.0**	**2.70**	**2.70**	**4.00**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.3	< 0.3	**4.10**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in micrograms per kilogram (ug/kg; parts per billion (ppb)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard. Underlined and italicized values indicate the analyte was not detected, but the reporting limit was above the Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. Some of the hotspot excavation confirmatory samples were treated with RemBind to evaluate its effectiveness. These samples are identified as "TREATED" in the sample naming convention.
8. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.

TABLE 2
SOIL ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sampling Event	MCP Method 1 S-1/GW-1, S-2/GW-1,& S-3/GW-1 Standards	Soil Borings - 2021																	
Location ID		SB-203	SB-204 - Can't find on plan		SB-205	SB-206		SB-207	SB-208	SB-209		SB-210	SB-211		SB-212	SB-213		SB-214	
Sample ID		SB-203 (2-4)	SB-204 (2-4)	SB-204 (6-8)	SB-205 (2-4)	SB-206 (0-4)	SB-206 (4-6)	SB-207 (2-4)	SB-208 (2-4)	SB-209 (2-4)	SB-209 (4-8)	SB-210 (2-4)	SB-211 (0-1)	SB-211 (7.5-10)	SB-212 (2-4)	SB-213 (0-2)	SB-213 (6-8)	SB-214 (2-4)	SB-214 (4-6)
Sample Depth		2-4 ft	2-4 ft	6-8 ft	2-4 ft	0-4 ft	4-6 ft	2-4 ft	2-4 ft	2-4 ft	4-8 ft	2-4 ft	0-1 ft	7.5-10 ft	2-4 ft	0-2 ft	6-8 ft	2-4 ft	4-6 ft
Sample Date		1/26/2021	1/26/2021	1/26/2021	1/26/2021	1/26/2021	1/26/2021	1/26/2021	1/26/2021	1/26/2021	1/26/2021	1/26/2021	1/26/2021	1/26/2021	1/26/2021	1/26/2021	1/26/2021	1/26/2021	1/26/2021
PFAS Compounds (ug/kg)																			
Perfluoroheptanoic acid (PFHpA)	**0.50**	< 0.17	**0.36**	< 0.17	**0.38**	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	**0.34**	**0.47**	< 0.17	< 0.17	**0.58**	**0.33**	< 0.17
Perfluorooctanoic acid (PFOA)	**0.72**	< 0.2	**1.40**	< 0.2	**2.50**	< 0.2	< 0.2	< 0.2	**0.49**	< 0.2	< 0.2	< 0.2	**0.64**	**0.88**	< 0.2	**0.29**	**0.69**	**0.54**	**0.32**
Perfluorononanoic acid (PFNA)	**0.32**	< 0.27	**0.44**	**1.10**	< 0.27	**0.49**	**0.67**	**0.78**	**2.60**	< 0.27	< 0.27	**1.00**	**0.60**	**0.85**	< 0.27	**0.38**	**0.43**	**1.00**	**0.35**
Perfluorodecanoic acid (PFDA)	**0.30**	< 0.24	**0.49**	**2.90**	< 0.24	**0.28**	< 0.24	**1.30**	< 0.24	< 0.24	< 0.24	**0.40**	**1.50**	**0.34**	**0.44**	**0.53**	< 0.24	***0.30***	< 0.24
Perfluorohexanesulfonic acid (PFHxS)	**0.30**	***< 0.3***	**3.00**	***< 0.3***	**13.0**	**1.40**	***< 0.3***	***< 0.3***	**0.87**	**1.30**	***0.30***	**0.36**	**0.91**	**1.50**	**0.33**	***< 0.3***	**1.10**	**0.53**	***< 0.3***
Perfluorooctanesulfonic acid (PFOS)	**2.00**	**1.70**	**42.0**	**18.0**	**34.0**	**56.0**	**8.00**	**17.0**	**97.0**	**4.50**	**0.99**	**41.0**	**16.0**	**110**	**1.50**	**1.90**	**2.70**	**43.0**	**20.0**
Perfluorobutanoic Acid (PFBA)	NS	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24
Perfluoropentanoic Acid (PFPeA)	NS	< 0.23	**0.23**	< 0.23	**0.27**	< 0.23	< 0.23	**0.72**	< 0.23	< 0.23	< 0.23	< 0.23	**0.51**	**0.46**	< 0.23	**0.28**	**0.53**	< 0.23	< 0.23
Perfluorohexanoic acid (PFHxA)	NS	< 0.16	**0.22**	< 0.16	**2.40**	< 0.16	< 0.16	**0.19**	< 0.16	**0.27**	< 0.16	< 0.16	**0.42**	**0.55**	**0.25**	**0.25**	**0.80**	**0.20**	< 0.16
Perfluoroundecanoic Acid (PFUnA)	NS	**5.90**	**37.0**	**140.00**	**0.62**	**6.30**	< 0.25	< 0.25	< 0.25	**0.60**	**0.69**	< 0.25	**2.80**	**1.90**	**1.00**	**1.30**	< 0.25	< 0.25	< 0.25
Perfluorododecanoic acid (PFDoDA)	NS	**0.38**	**3.30**	**3.00**	< 0.19	**0.41**	< 0.19	< 0.19	< 0.19	**0.37**	< 0.19	< 0.19	**1.50**	< 0.19	**1.10**	**0.41**	< 0.19	< 0.19	< 0.19
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	**3.50**	**0.69**	< 0.22	**0.87**	**2.20**	< 0.22	< 0.22	< 0.22	**0.67**	**0.30**	< 0.22	**4.00**	**0.25**	**1.70**	**0.97**	< 0.22	< 0.22	< 0.22
Perfluorotetradecanoic acid (PFTeDA)	NS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	**0.47**	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Perfluorobutanesulfonic acid (PFBS)	NS	< 0.17	< 0.17	< 0.17	**0.89**	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	**0.21**	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17
Perfluoropentanesulfonic Acid (PFPeS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoroheptanesulfonic acid (PFHpS)	NS	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17
Perfluorononanesulfonic Acid (PFNS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluorodecanesulfonic acid (PFDS)	NS	< 0.27	**0.78**	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	**0.49**	< 0.27	< 0.27	**0.54**	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27
Perfluorooctane Sulfonamide (PFOSA)	NS	**0.76**	**6.80**	**5.80**	**23.0**	< 0.2	< 0.2	**0.22**	< 0.2	**2.50**	< 0.2	< 0.2	**0.92**	**2.60**	**2.40**	< 0.2	< 0.2	< 0.2	< 0.2
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	< 0.3	**0.37**	< 0.3	**0.69**	**1.30**	< 0.3	**0.61**	**1.80**	< 0.3	< 0.3	< 0.3	< 0.3	**3.90**	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	< 0.3	**3.60**	**37.0**	< 0.3	**0.89**	< 0.3	< 0.3	**70.0**	< 0.3	< 0.3	< 0.3	**1.10**	**23.0**	**0.90**	< 0.3	< 0.3	**25.0**	**1.60**
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in micrograms per kilogram (ug/kg; parts per billion (ppb)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard. Underlined and italicized values indicate the analyte was not detected, but the reporting limit was above the Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. Some of the hotspot excavation confirmatory samples were treated with RemBind to evaluate its effectiveness. These samples are identified as "TREATED" in the sample naming convention.
8. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.

TABLE 2
SOIL ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sampling Event	MCP Method 1 S-1/GW-1, S-2/GW-1,& S-3/GW-1 Standards	MW-300 Series Borings/Well Installations													
Location ID		MW-301		MW-302		MW-303		MW-304		MW-305		MW-306		MW-310	
Sample ID		MW-301 (0-2')	MW-301 (12-14')	MW-302 (0-2')	MW-302 (12-14')	MW-303 (0-2')	MW-303 (12-14')	MW-304 (0-4in)	MW-304(12ft)	MW-305 (0-2')	MW-305 (12-14')	MW-306 (0-2')	MW-306 (8-10')	MW-310(0-6in)	MW-310 (12-13ft)
Sample Depth		0-2 ft	12-14 ft	0-2 ft	12-14 ft	0-2 ft	12-14 ft	0-4 in	12 ft	0-2 ft	12-14 ft	0-2 ft	8-10 ft	0-6 in	12-13 ft
Sample Date		8/12/2022	8/12/2022	8/12/2022	8/12/2022	8/12/2022	8/12/2022	10/3/2022	10/3/2022	8/18/2022	8/18/2022	8/18/2022	8/17/2022	10/3/2022	10/3/2022
PFAS Compounds (ug/kg)															
Perfluoroheptanoic acid (PFHpA)	**0.50**	**0.17**	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	**0.54**	< 0.49	< 0.17	< 0.17	< 0.17	< 0.17	< 0.46	< 0.46
Perfluorooctanoic acid (PFOA)	**0.72**	< 0.2	< 0.2	< 0.2	< 0.2	**0.34**	< 0.2	**0.97**	< 0.49	**0.26**	< 0.2	< 0.2	< 0.2	**0.56**	< 0.46
Perfluorononanoic acid (PFNA)	**0.32**	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	*< 0.51*	*< 0.49*	< 0.27	< 0.27	< 0.27	< 0.27	*< 0.46*	*< 0.46*
Perfluorodecanoic acid (PFDA)	**0.30**	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	*< 0.51*	*< 0.49*	< 0.24	< 0.24	< 0.24	< 0.24	*< 0.46*	*< 0.46*
Perfluorohexanesulfonic acid (PFHxS)	**0.30**	**1.40**	***< 0.3***	***< 0.3***	***< 0.3***	***< 0.3***	***< 0.3***	**1.90**	*< 0.49*	**7.80**	**0.35**	***< 0.3***	***< 0.3***	*< 0.46*	*< 0.46*
Perfluorooctanesulfonic acid (PFOS)	**2.00**	< 0.27	< 0.27	**1.90**	**2.40**	**2.60**	< 0.27	**11.0**	< 0.49	**33.0**	**1.60**	**0.32**	< 0.27	**4.50**	< 0.46
Perfluorobutanoic Acid (PFBA)	NS	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.51	< 0.49	< 0.24	< 0.24	< 0.24	< 0.24	< 0.46	< 0.46
Perfluoropentanoic Acid (PFPeA)	NS	< 0.23	< 0.23	< 0.23	< 0.23	**0.27**	< 0.23	**0.77**	< 0.49	< 0.23	< 0.23	< 0.23	< 0.23	< 0.46	< 0.46
Perfluorohexanoic acid (PFHxA)	NS	**0.20**	< 0.16	< 0.16	< 0.16	**0.23**	< 0.16	**0.94**	< 0.49	**0.27**	< 0.16	< 0.16	< 0.16	< 0.46	< 0.46
Perfluoroundecanoic Acid (PFUnA)	NS	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.51	< 0.49	**2.00**	< 0.25	< 0.25	< 0.25	< 0.46	< 0.46
Perfluorododecanoic acid (PFDoDA)	NS	< 0.19	< 0.19	< 0.19	< 0.19	< 0.19	< 0.19	< 0.51	< 0.49	< 0.19	< 0.19	< 0.19	< 0.19	< 0.46	< 0.46
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	**0.96**	< 0.49	< 0.22	< 0.22	< 0.22	< 0.22	< 0.46	< 0.46
Perfluorotetradecanoic acid (PFTeDA)	NS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.51	< 0.49	< 0.3	< 0.3	< 0.3	< 0.3	< 0.46	< 0.46
Perfluorobutanesulfonic acid (PFBS)	NS	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.51	< 0.49	< 0.17	< 0.17	< 0.17	< 0.17	< 0.46	< 0.46
Perfluoropentanesulfonic Acid (PFPeS)	NS	---	---	---	---	---	---	< 0.51	< 0.49	---	---	---	---	< 0.46	< 0.46
Perfluoroheptanesulfonic acid (PFHpS)	NS	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.51	< 0.49	< 0.17	< 0.17	< 0.17	< 0.17	< 0.46	< 0.46
Perfluorononanesulfonic Acid (PFNS)	NS	---	---	---	---	---	---	< 0.51	< 0.49	---	---	---	---	< 0.46	< 0.46
Perfluorodecanesulfonic acid (PFDS)	NS	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.51	< 0.49	< 0.27	< 0.27	< 0.27	< 0.27	< 0.46	< 0.46
Perfluorooctane Sulfonamide (PFOSA)	NS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	**0.61**	< 0.49	**0.57**	< 0.2	< 0.2	< 0.2	< 0.46	< 0.46
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	---	---	< 0.22	< 0.22	< 0.22	< 0.22	---	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	---	---	< 0.29	< 0.29	< 0.29	< 0.29	---	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	---	---	---	---	---	---	< 0.51	< 0.49	---	---	---	---	< 0.46	< 0.46
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	---	---	---	---	---	---	< 0.51	< 0.49	---	---	---	---	< 0.46	< 0.46
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	---	---	< 0.31	< 0.31	< 0.31	< 0.31	---	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	---	---	< 0.39	< 0.39	< 0.39	< 0.39	---	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	---	---	---	---	---	---	< 0.51	< 0.49	---	---	---	---	< 0.46	< 0.46
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	< 0.3	< 0.3	< 0.3	**0.50**	< 0.3	< 0.3	< 0.51	< 0.49	< 0.3	< 0.3	< 0.3	< 0.3	< 0.46	< 0.46
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.51	**0.59**	< 0.3	< 0.3	< 0.3	< 0.3	< 0.46	< 0.46
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	---	---	---	---	---	---	< 0.51	< 0.49	---	---	---	---	< 0.46	< 0.46
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	---	---	---	---	---	---	< 0.51	< 0.49	---	---	---	---	< 0.46	< 0.46
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	---	---	---	---	---	---	< 0.51	< 0.49	---	---	---	---	< 0.46	< 0.46
Perfluoro-1-butanesulfonamide (FBSA)	NS	---	---	---	---	---	---	< 0.51	< 0.49	---	---	---	---	< 0.46	< 0.46
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	---	---	---	---	---	---	< 0.51	< 0.49	---	---	---	---	< 0.46	< 0.46
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	---	---	---	---	---	---	< 0.51	< 0.49	---	---	---	---	< 0.46	< 0.46
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	---	---	---	---	---	---	< 0.51	< 0.49	---	---	---	---	< 0.46	< 0.46
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	---	---	---	---	---	---	< 0.51	< 0.49	---	---	---	---	< 0.46	< 0.46
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	---	---	---	---	---	---	< 0.51	< 0.49	---	---	---	---	< 0.46	< 0.46
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	---	---	---	---	---	---	< 0.51	< 0.49	---	---	---	---	< 0.46	< 0.46

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in micrograms per kilogram (ug/kg; parts per billion (ppb)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard. Underlined and italicized values indicate the analyte was not detected, but the reporting limit was above the Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. Some of the hotspot excavation confirmatory samples were treated with RemBind to evaluate its effectiveness. These samples are identified as "TREATED" in the sample naming convention.
8. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.

TABLE 2
SOIL ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sampling Event	MCP Method 1 S-1/GW-1, S-2/GW-1,& S-3/GW-1 Standards	Shallow Soil Samples - Western Edge of Property							Facility Perimeter Soil Sampling - Transect A										
Location ID		SS-201	SS-202	SS-203	SS-204		SS-214		SS-101		SS-102					SS-103		SS-104	
Sample ID		SS-201	SS-202	SS-203	SS-204 0-6''	SS-204 12-16''	SS-214 0-6''	SS-214 14-20''	SS-101 (0-3in)	SS-101 (16-20in)	SS-102 (FM)	SS-102 (0-3in)	SS-102 (16-20in)	SS-102 (5ft)	SS-102 (10ft)	SS-103 (0-3in)	SS-103 (16-20in)	SS-104 (0-3in)	SS-104 (16-20in)
Sample Depth		0-6 in	0-6 in	0-6 in	0-6 in	12-16 in	0-6 in	14-20 in	0-3 in	16-20 in	Forest Matter	0-3 in	16-20 in	5 ft	10 ft	0-3 in	16-20 in	0-3 in	16-20 in
Sample Date		6/15/2023	6/15/2023	6/15/2023	6/15/2023	6/15/2023	6/15/2023	6/15/2023	10/4/2022	10/4/2022	10/4/2022	10/4/2022	10/4/2022	10/4/2022	10/4/2022	10/4/2022	10/4/2022	10/4/2022	10/4/2022
PFAS Compounds (ug/kg)																			
Perfluoroheptanoic acid (PFHpA)	**0.50**	***< 0.5***	< 0.46	*< 0.51*	< 0.49	< 0.46	*< 0.52*	*< 0.53*	**1.60**	**0.89**	**0.96**	**2.30**	**0.72**	< 0.45	< 0.44	**1.10**	**0.45**	**0.79**	< 0.44
Perfluorooctanoic acid (PFOA)	**0.72**	< 0.5	< 0.46	< 0.51	**0.51**	< 0.46	< 0.52	< 0.53	**3.00**	**2.30**	**1.50**	**1.80**	**0.50**	< 0.45	< 0.44	**0.87**	**0.47**	**1.20**	< 0.44
Perfluorononanoic acid (PFNA)	**0.32**	*< 0.5*	*< 0.46*	*< 0.51*	*< 0.49*	*< 0.46*	*< 0.52*	*< 0.53*	**1.90**	**1.80**	**0.82**	**1.30**	**0.53**	*< 0.45*	*< 0.44*	**0.99**	*< 0.45*	*< 0.49*	*< 0.44*
Perfluorodecanoic acid (PFDA)	**0.30**	*< 0.5*	*< 0.46*	*< 0.51*	*< 0.49*	*< 0.46*	*< 0.52*	*< 0.53*	**5.40**	**4.20**	**0.89**	*< 0.49*	*< 0.47*	*< 0.45*	*< 0.44*	*< 0.51*	*< 0.45*	*< 0.49*	*< 0.44*
Perfluorohexanesulfonic acid (PFHxS)	**0.30**	*< 0.5*	*< 0.46*	*< 0.51*	**0.73**	**0.51**	*< 0.52*	*< 0.53*	**2.40**	**1.60**	**3.50**	**2.00**	**0.60**	*< 0.45*	*< 0.44*	**1.30**	**0.68**	**2.20**	*< 0.44*
Perfluorooctanesulfonic acid (PFOS)	**2.00**	**0.60**	**0.71**	**2.30**	**12.0**	**13.0**	**0.75**	**1.60**	**9.40**	**9.00**	**13.0**	**24.0**	**4.20**	**4.10**	**3.20**	**15.0**	**6.10**	**9.10**	< 0.44
Perfluorobutanoic Acid (PFBA)	NS	< 0.5	< 0.46	< 0.51	**0.59**	**0.49**	< 0.52	< 0.53	**1.50**	**0.95**	**2.60**	**4.90**	**1.00**	< 0.45	< 0.44	**3.60**	**0.84**	**1.90**	< 0.44
Perfluoropentanoic Acid (PFPeA)	NS	< 0.5	< 0.46	< 0.51	**1.10**	**0.84**	**0.66**	**0.58**	**3.00**	**1.80**	**3.20**	**8.40**	**1.80**	< 0.45	< 0.44	**3.90**	**1.10**	**3.30**	< 0.44
Perfluorohexanoic acid (PFHxA)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	**2.70**	**1.20**	**1.80**	**4.20**	**1.30**	< 0.45	< 0.44	**1.90**	**0.59**	**2.00**	< 0.44
Perfluoroundecanoic Acid (PFUnA)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	**8.50**	**7.30**	**3.60**	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
Perfluorododecanoic acid (PFDoDA)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	**2.60**	**1.70**	**0.70**	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	**9.50**	**5.20**	**2.70**	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
Perfluorotetradecanoic acid (PFTeDA)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	**0.96**	**0.56**	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
Perfluorobutanesulfonic acid (PFBS)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	< 0.48	< 0.48	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
Perfluoropentanesulfonic Acid (PFPeS)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	< 0.48	< 0.48	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
Perfluoroheptanesulfonic Acid (PFHpS)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	< 0.48	< 0.48	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
Perfluorononanesulfonic Acid (PFNS)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	< 0.48	< 0.48	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
Perfluorodecanesulfonic acid (PFDS)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	**0.91**	**0.79**	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
Perfluorooctane Sulfonamide (PFOSA)	NS	< 0.5	< 0.46	< 0.51	**0.77**	< 0.46	< 0.52	< 0.53	< 0.48	< 0.48	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	< 0.48	< 0.48	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	< 0.48	< 0.48	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	< 0.48	< 0.48	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	**0.68**	**0.64**	< 0.48	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	**1.40**	**0.72**	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	< 0.48	< 0.48	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	< 0.48	< 0.48	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	< 0.48	< 0.48	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
Perfluoro-1-butanesulfonamide (FBSA)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	< 0.48	< 0.48	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	**1.90**	**2.40**	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	< 0.48	< 0.48	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	< 0.48	< 0.48	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	< 0.48	< 0.48	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	< 0.48	< 0.48	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	< 0.5	< 0.46	< 0.51	< 0.49	< 0.46	< 0.52	< 0.53	< 0.48	< 0.48	< 0.48	< 0.49	< 0.47	< 0.45	< 0.44	< 0.51	< 0.45	< 0.49	< 0.44

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in micrograms per kilogram (ug/kg; parts per billion (ppb)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard. Underlined and italicized values indicate the analyte was not detected, but the reporting limit was above the Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. Some of the hotspot excavation confirmatory samples were treated with RemBind to evaluate its effectiveness. These samples are identified as "TREATED" in the sample naming convention.
8. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.

TABLE 2
SOIL ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sampling Event	MCP Method 1 S-1/GW-1, S-2/GW-1,& S-3/GW-1 Standards	Transect A (cont)		Facility Perimeter Soil Sampling - Transect B														
Location ID		SS-205	SS-206	SS-105			SS-106				SS-107			SS-108			SS-207	SS-208
Sample ID		SS-205	SS-206	SS-105 (FM)	SS-105 (0-3in)	SS-105 (16-20in)	SS-106 (0-3in)	SS-106 (16-20in)	SS-106 (5ft)	SS-106 (10ft)	7 (0-3in) Dup	SS-107 (0-3in)	SS-107 (16-20in)	SS-108 (0-3in)	SS-108 (16-20in)		SS-207	SS-208
Sample Depth		0-6 in	0-6 in	Forest Matter	0-3 in	16-20 in	0-3 in	16-20 in	5 ft	10 ft	0-3 in	0-3 in	16-20 in	0-3 in	16-20 in		0-6 in	0-6 in
Sample Date		6/15/2023	6/15/2023	10/4/2022	10/4/2022	10/4/2022	10/4/2022	10/4/2022	10/4/2022	10/4/2022	10/4/2022	10/4/2022	10/4/2022	10/4/2022	10/4/2022		6/15/2023	6/15/2023
PFAS Compounds (ug/kg)																		
Perfluoroheptanoic acid (PFHpA)	**0.50**	< 0.48	< 0.47	**1.30**	< 0.48	< 0.46	**1.30**	< 0.47	< 0.43	< 0.43	*< 1.6*	**0.85**	< 0.45	< 0.47	< 0.47		*< 0.51*	*< 0.5*
Perfluorooctanoic acid (PFOA)	**0.72**	< 0.48	< 0.47	**2.60**	**0.93**	< 0.46	**2.10**	**1.20**	**1.30**	< 0.43	**3.40**	**1.10**	< 0.45	**0.94**	< 0.47		< 0.51	< 0.5
Perfluorononanoic acid (PFNA)	**0.32**	*< 0.48*	*< 0.47*	*< 1.1*	*< 0.48*	*< 0.46*	**2.90**	**3.30**	**1.50**	*< 0.43*	*< 1.6*	**0.56**	*< 0.45*	*< 0.47*	*< 0.47*		*< 0.51*	*< 0.5*
Perfluorodecanoic acid (PFDA)	**0.30**	*< 0.48*	*< 0.47*	**1.70**	**0.68**	*< 0.46*	**0.70**	*< 0.47*	*< 0.43*	*< 0.43*	**3.80**	*< 0.46*	*< 0.45*	*< 0.47*	*< 0.47*		*< 0.51*	*< 0.5*
Perfluorohexanesulfonic acid (PFHxS)	**0.30**	*< 0.48*	*< 0.47*	**1.90**	*< 0.48*	*< 0.46*	*< 0.47*	*< 0.47*	*< 0.43*	*< 0.43*	**2.50**	*< 0.46*	*< 0.45*	*< 0.47*	*< 0.47*		*< 0.51*	*< 0.5*
Perfluorooctanesulfonic acid (PFOS)	**2.00**	**1.20**	< 0.47	**5.40**	**2.40**	**0.95**	**3.80**	**5.30**	**3.80**	< 0.43	**7.80**	**7.10**	**2.60**	**6.70**	< 0.47		**0.96**	< 0.5
Perfluorobutanoic Acid (PFBA)	NS	< 0.48	< 0.47	**2.00**	**1.30**	**0.53**	**2.00**	**1.00**	< 0.43	< 0.43	**2.50**	**2.20**	< 0.45	**1.10**	< 0.47		< 0.51	< 0.5
Perfluoropentanoic Acid (PFPeA)	NS	< 0.48	< 0.47	**4.80**	**1.80**	**0.73**	**2.30**	**1.00**	< 0.43	< 0.43	**23.0**	**2.70**	< 0.45	**1.50**	< 0.47		< 0.51	< 0.5
Perfluorohexanoic acid (PFHxA)	NS	< 0.48	< 0.47	**2.10**	**0.74**	< 0.46	**1.20**	**0.47**	< 0.43	< 0.43	**2.40**	**1.20**	< 0.45	**0.74**	< 0.47		< 0.51	< 0.5
Perfluoroundecanoic Acid (PFUnA)	NS	< 0.48	< 0.47	**4.40**	**2.10**	**1.40**	< 0.47	< 0.47	< 0.43	< 0.43	**6.30**	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
Perfluorododecanoic acid (PFDoDA)	NS	< 0.48	< 0.47	**2.60**	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	**3.50**	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	< 0.48	< 0.47	**5.50**	**0.63**	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	**7.90**	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
Perfluorotetradecanoic acid (PFTeDA)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
Perfluorobutanesulfonic acid (PFBS)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
Perfluoropentanesulfonic Acid (PFPeS)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
Perfluoroheptanesulfonic acid (PFHpS)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
Perfluorononanesulfonic Acid (PFNS)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
Perfluorodecanesulfonic acid (PFDS)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
Perfluorooctane Sulfonamide (PFOSA)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---		---	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---		---	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---		---	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---		---	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	< 0.48	< 0.47	**3.10**	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	**2.30**	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	< 0.48	< 0.47	**2.70**	< 0.48	< 0.46	**1.40**	< 0.47	< 0.43	< 0.43	**3.10**	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
Perfluoro-1-butanesulfonamide (FBSA)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	< 0.48	< 0.47	< 1.1	< 0.48	< 0.46	< 0.47	< 0.47	< 0.43	< 0.43	< 1.6	< 0.46	< 0.45	< 0.47	< 0.47		< 0.51	< 0.5

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in micrograms per kilogram (ug/kg; parts per billion (ppb)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard. Underlined and italicized values indicate the analyte was not detected, but the reporting limit was above the Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. Some of the hotspot excavation confirmatory samples were treated with RemBind to evaluate its effectiveness. These samples are identified as "TREATED" in the sample naming convention.
8. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.

TABLE 2
SOIL ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sampling Event	MCP Method 1 S-1/GW-1, S-2/GW-1,& S-3/GW-1 Standards	Facility Perimeter Soil Sampling - Transect C															
Location ID		SS-109		SS-110					SS-111			SS-112		SS-209		SS-210	
Sample ID		SS-109 (0-3)	SS-109 (16-20)	SS-110 (FM)	SS-110 (0-3)	SS-110 (16-20)	SS-110 (5)	SS-110 (10)	SS-111 (0-3)	Duplicate 3	SS-111 (16-20)	SS-112 (0-3)	SS-112 (16-20)	SS-209 0-6"	SS-209 16-20"	Duplicate 1	SS-210
Sample Depth		0-3 in	16-20 in	Forest Matter	0-3 in	16-20 in	5 ft	10 ft	0-3 in	16-20 in	16-20 in	0-3 in	16-20 in	0-6 in	16-20 in	0-6 in	0-6 in
Sample Date		10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	6/15/2023	6/15/2023	6/15/2023	6/15/2023
PFAS Compounds (ug/kg)																	
Perfluoroheptanoic acid (PFHpA)	**0.50**	< 0.47	**1.80**	*< 1.8*	**1.30**	**0.63**	< 0.42	< 0.43	**1.00**	**0.59**	**0.54**	< 0.49	< 0.48	**0.89**	< 0.49	*< 0.51*	< 0.49
Perfluorooctanoic acid (PFOA)	**0.72**	**1.30**	**7.20**	**3.50**	**2.30**	**1.60**	**0.85**	**1.00**	**1.60**	**1.80**	**1.80**	< 0.49	**0.74**	**1.00**	**0.57**	< 0.51	< 0.49
Perfluorononanoic acid (PFNA)	**0.32**	**0.57**	**8.30**	*< 1.8*	**7.80**	**3.60**	*< 0.42*	*< 0.43*	**0.96**	*< 0.47*	*< 0.46*	*< 0.49*	*< 0.48*	**1.00**	**0.66**	*< 0.51*	*< 0.49*
Perfluorodecanoic acid (PFDA)	**0.30**	**0.48**	**2.60**	**3.00**	**1.00**	*< 0.46*	*< 0.42*	*< 0.43*	**1.10**	*< 0.47*	*< 0.46*	*< 0.49*	*< 0.48*	*< 0.52*	*< 0.49*	*< 0.51*	*< 0.49*
Perfluorohexanesulfonic acid (PFHxS)	**0.30**	**1.60**	**8.00**	**5.60**	**1.20**	**0.65**	**0.51**	**0.78**	**1.70**	**0.68**	**0.72**	*< 0.49*	**0.53**	*< 0.52*	*< 0.49*	*< 0.51*	*< 0.49*
Perfluorooctanesulfonic acid (PFOS)	**2.00**	**4.50**	**180**	**19.0**	**90.0**	**63.0**	**11.0**	**0.70**	**14.0**	**38.0**	**35.0**	***2.00***	**6.90**	**13.0**	**7.90**	< 0.51	< 0.49
Perfluorobutanoic Acid (PFBA)	NS	< 0.47	**3.10**	**3.70**	**3.20**	**0.85**	< 0.42	< 0.43	**4.10**	**1.70**	**1.60**	**0.69**	**0.64**	**1.60**	**0.70**	< 0.51	< 0.49
Perfluoropentanoic Acid (PFPeA)	NS	**0.77**	**4.90**	**4.40**	**3.60**	**0.95**	< 0.42	< 0.43	**4.20**	**2.40**	**2.20**	**0.67**	**0.89**	**4.10**	**1.80**	< 0.51	< 0.49
Perfluorohexanoic acid (PFHxA)	NS	**0.93**	**3.50**	**3.20**	**2.30**	**0.72**	< 0.42	< 0.43	**2.40**	**1.30**	**1.00**	< 0.49	**0.58**	**3.60**	**1.30**	< 0.51	< 0.49
Perfluoroundecanoic Acid (PFUnA)	NS	**0.79**	**1.70**	**2.20**	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
Perfluorododecanoic acid (PFDoDA)	NS	**0.77**	< 0.48	**2.10**	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	**0.62**	< 0.48	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
Perfluorotetradecanoic acid (PFTeDA)	NS	< 0.47	< 0.48	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
Perfluorobutanesulfonic acid (PFBS)	NS	< 0.47	< 0.48	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
Perfluoropentanesulfonic Acid (PFPeS)	NS	< 0.47	< 0.48	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
Perfluoroheptanesulfonic acid (PFHpS)	NS	< 0.47	**0.86**	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
Perfluorononanesulfonic Acid (PFNS)	NS	< 0.47	**9.00**	< 1.8	**1.60**	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
Perfluorodecanesulfonic acid (PFDS)	NS	< 0.47	**3.60**	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
Perfluorooctane Sulfonamide (PFOSA)	NS	< 0.47	< 0.48	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	< 0.47	< 0.48	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	< 0.47	< 0.48	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	< 0.47	< 0.48	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	**0.77**	**0.69**	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	**3.10**	**0.78**	**3.20**	**0.92**	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	< 0.47	< 0.48	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	< 0.47	< 0.48	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	< 0.47	< 0.48	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
Perfluoro-1-butanesulfonamide (FBSA)	NS	< 0.47	< 0.48	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	**1.80**	**16.0**	**2.60**	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	< 0.47	< 0.48	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	< 0.47	< 0.48	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	< 0.47	< 0.48	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	< 0.47	< 0.48	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	< 0.47	< 0.48	< 1.8	< 0.48	< 0.46	< 0.42	< 0.43	< 0.49	< 0.47	< 0.46	< 0.49	< 0.48	< 0.52	< 0.49	< 0.51	< 0.49

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in micrograms per kilogram (ug/kg; parts per billion (ppb)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard. Underlined and italicized values indicate the analyte was not detected, but the reporting limit was above the Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. Some of the hotspot excavation confirmatory samples were treated with RemBind to evaluate its effectiveness. These samples are identified as "TREATED" in the sample naming convention.
8. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.

TABLE 2
SOIL ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sampling Event	MCP Method 1 S-1/GW-1, S-2/GW-1,& S-3/GW-1 Standards	Facility Perimeter Soil Sampling - Transect D												Facility Perimeter Soil Sampling - Transect E						
Location ID		SS-113		SS-114					SS-115			SS-116	SS-211	SS-117		SS-118				
Sample ID		SS-113 (0-3)	SS-113 (16-20)	SS-114 (FM)	SS-114 (0-3)	SS-114 (16-20)	SS-114 (5)	SS-114 (10)	5 (0-3) Dupli	SS-115 (0-3)	SS-115 (16-20)	SS-116	SS-211	SS-117 (0-3)	SS-117 (16-20)	SS-118 (FM)	SS-118 (0-in)	SS-118 (16-20)	SS-118 (5)	SS-118 (10)
Sample Depth		0-3 in	16-20 in	Forest Matter	0-3 in	16-20 in	5 ft	10 ft	0-3 in	0-3 in	16-20 in	0-6 in	0-6 in	0-3 in	16-20 in	Forest Matter	0-3 in	16-20 in	5 ft	10 ft
Sample Date		10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	6/15/2023	6/15/2023	10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022
PFAS Compounds (ug/kg)																				
Perfluoroheptanoic acid (PFHpA)	**0.50**	< 0.48	**1.10**	*< 1.6*	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	*< 0.54*	< 0.48	***0.50***	**0.58**	*< 0.87*	**0.55**	< 0.43	< 0.43	< 0.43
Perfluorooctanoic acid (PFOA)	**0.72**	< 0.48	**5.10**	***3.2***	**0.81**	**0.96**	< 0.45	< 0.45	< 0.47	< 0.49	**0.57**	< 0.54	< 0.48	**0.84**	**1.50**	*< 0.87*	**1.40**	< 0.43	< 0.43	< 0.43
Perfluorononanoic acid (PFNA)	**0.32**	*< 0.48*	**5.10**	*< 1.6*	**1.50**	*< 0.44*	*< 0.45*	*< 0.45*	*< 0.47*	*< 0.49*	*< 0.45*	*< 0.54*	*< 0.48*	*< 0.46*	**0.85**	*< 0.87*	**3.00**	**0.94**	**0.45**	*< 0.43*
Perfluorodecanoic acid (PFDA)	**0.30**	*< 0.48*	*< 0.46*	***1.6***	*< 0.49*	*< 0.44*	*< 0.45*	*< 0.45*	*< 0.47*	*< 0.49*	*< 0.45*	*< 0.54*	*< 0.48*	*< 0.46*	**1.60**	*< 0.87*	*< 0.48*	*< 0.43*	*< 0.43*	*< 0.43*
Perfluorohexanesulfonic acid (PFHxS)	**0.30**	*< 0.48*	**8.60**	***45***	**2.10**	**1.60**	**0.96**	**0.56**	**0.49**	**0.51**	*< 0.45*	*< 0.54*	**0.58**	**11.0**	**8.70**	**2.80**	**1.40**	*< 0.43*	*< 0.43*	*< 0.43*
Perfluorooctanesulfonic acid (PFOS)	**2.00**	**1.70**	**180**	***59***	**79.0**	**25.0**	< 0.45	< 0.45	**1.20**	**1.80**	**13.0**	< 0.54	**1.80**	**23.0**	**42.0**	**5.20**	**33.0**	**14.0**	**6.10**	< 0.43
Perfluorobutanoic Acid (PFBA)	NS	< 0.48	**3.40**	**3.4**	**2.20**	< 0.44	< 0.45	< 0.45	**0.64**	**0.76**	< 0.45	< 0.54	< 0.48	< 0.46	< 0.43	**1.70**	**1.50**	< 0.43	< 0.43	< 0.43
Perfluoropentanoic Acid (PFPeA)	NS	< 0.48	**4.40**	**3.5**	**1.90**	**0.53**	< 0.45	< 0.45	**0.65**	**0.73**	**0.46**	< 0.54	< 0.48	< 0.46	**0.62**	< 0.87	**1.60**	< 0.43	< 0.43	< 0.43
Perfluorohexanoic acid (PFHxA)	NS	< 0.48	**5.30**	**7.5**	**2.00**	< 0.44	< 0.45	< 0.45	**0.77**	**0.73**	**0.54**	< 0.54	< 0.48	**1.10**	**1.00**	**1.10**	**2.40**	< 0.43	< 0.43	< 0.43
Perfluoroundecanoic Acid (PFUnA)	NS	< 0.48	**1.20**	**7.8**	< 0.49	< 0.44	< 0.45	< 0.45	**0.63**	**0.65**	< 0.45	< 0.54	< 0.48	**0.73**	**3.10**	**2.50**	**0.74**	< 0.43	< 0.43	< 0.43
Perfluorododecanoic acid (PFDoDA)	NS	< 0.48	< 0.46	< 1.6	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	**1.00**	**0.76**	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	< 0.48	< 0.46	**3.0**	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	**4.40**	**3.20**	**1.60**	< 0.48	< 0.43	< 0.43	< 0.43
Perfluorotetradecanoic acid (PFTeDA)	NS	< 0.48	< 0.46	< 1.6	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	< 0.46	< 0.43	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
Perfluorobutanesulfonic acid (PFBS)	NS	< 0.48	< 0.46	**3.7**	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	**0.80**	< 0.43	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
Perfluoropentanesulfonic Acid (PFPeS)	NS	< 0.48	< 0.46	**5.0**	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	**0.93**	**0.56**	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
Perfluoroheptanesulfonic acid (PFHpS)	NS	< 0.48	**1.90**	< 1.6	< 0.49	**1.40**	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	< 0.46	< 0.43	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
Perfluorononanesulfonic Acid (PFNS)	NS	< 0.48	**0.86**	< 1.6	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	< 0.46	**0.45**	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
Perfluorodecanesulfonic acid (PFDS)	NS	< 0.48	< 0.46	**1.7**	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	**0.70**	**0.60**	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
Perfluorooctane Sulfonamide (PFOSA)	NS	< 0.48	< 0.46	< 1.6	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	**4.70**	**5.80**	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	< 0.48	< 0.46	< 1.6	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	< 0.46	< 0.43	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	< 0.48	< 0.46	< 1.6	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	< 0.46	< 0.43	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	< 0.48	< 0.46	< 1.6	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	< 0.46	< 0.43	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	< 0.48	< 0.46	< 1.6	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	**0.62**	< 0.43	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	< 0.48	< 0.46	< 1.6	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	**1.10**	**0.79**	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	< 0.48	< 0.46	< 1.6	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	< 0.46	< 0.43	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	< 0.48	< 0.46	< 1.6	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	< 0.46	< 0.43	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	< 0.48	< 0.46	< 1.6	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	< 0.46	< 0.43	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
Perfluoro-1-butanesulfonamide (FBSA)	NS	< 0.48	< 0.46	**6.0**	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	< 0.46	< 0.43	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	< 0.48	< 0.46	**8.1**	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	**1.50**	**5.10**	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	< 0.48	< 0.46	< 1.6	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	< 0.46	< 0.43	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	< 0.48	< 0.46	< 1.6	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	< 0.46	< 0.43	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	< 0.48	< 0.46	< 1.6	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	< 0.46	< 0.43	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	< 0.48	< 0.46	< 1.6	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	< 0.46	< 0.43	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	< 0.48	< 0.46	< 1.6	< 0.49	< 0.44	< 0.45	< 0.45	< 0.47	< 0.49	< 0.45	< 0.54	< 0.48	< 0.46	< 0.43	< 0.87	< 0.48	< 0.43	< 0.43	< 0.43

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in micrograms per kilogram (ug/kg; parts per billion (ppb)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard. Underlined and italicized values indicate the analyte was not detected, but the reporting limit was above the Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. Some of the hotspot excavation confirmatory samples were treated with RemBind to evaluate its effectiveness. These samples are identified as "TREATED" in the sample naming convention.
8. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.

TABLE 2
SOIL ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sampling Event	MCP Method 1 S-1/GW-1, S-2/GW-1,& S-3/GW-1 Standards	Transect E (cont)			Facility Perimeter Soil Sampling - Transect F								PC-38/MW-400 Series Borings/Well Installations							
Location ID		SS-120		SS-212	SS-121		SS-122					SS-213	PC-39D	MW-401D	MW-402D	MW-403D	MW-405	MW-405	MW-406	MW-406
Sample ID		SS-120 0-6''	SS-120 16-20''	SS-212	SS-121 (0-3)	SS-121 (16-20)	SS-122 (FM)	SS-122 (0-3)	SS-122 (16-20)	SS-122 (5)	SS-122 (10)	SS-213	PC-39D 28-20'	MW-401D 50-52'	MW-402D 34-35'	MW-403D 18-20'	MW-405 5'	MW-405 12'	MW-406 5'	MW-406 13'
Sample Depth		0-6 in	16-20 in	0-6 in	0-3 in	16-20 in	Forest Matter	0-3 in	16-20 in	5 ft	10 ft	0-6 in	28-30 ft	50-52 ft	34-35 ft	18-20 ft	5 ft	12 ft	5 ft	13 ft
Sample Date		6/15/2023	6/15/2023	6/15/2023	10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	10/3/2022	6/15/2023	7/10/2023	7/11/2023	7/12/2023	7/14/2023	11/9/2023	11/9/2023	11/9/2023	11/9/2023
PFAS Compounds (ug/kg)																				
Perfluoroheptanoic acid (PFHpA)	**0.50**	< 0.53	**< 0.5**	< 0.48	**< 0.5**	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	**< 0.5**	< 0.54	< 0.52	< 0.45	< 0.231	< 0.227	< 0.252	< 0.234
Perfluorooctanoic acid (PFOA)	**0.72**	< 0.53	**0.51**	< 0.48	**0.61**	< 0.45	< 0.9	**2.30**	**0.86**	< 0.43	< 0.43	**0.64**	< 0.5	< 0.54	< 0.52	< 0.45	< 0.231	< 0.227	**0.37**	< 0.234
Perfluorononanoic acid (PFNA)	**0.32**	< 0.53	**0.65**	< 0.48	< 0.5	**0.46**	< 0.9	**1.10**	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	< 0.231	< 0.227	**0.36**	< 0.234
Perfluorodecanoic acid (PFDA)	**0.30**	< 0.53	< 0.5	< 0.48	**0.53**	< 0.45	**1.30**	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	< 0.231	< 0.227	< 0.252	< 0.234
Perfluorohexanesulfonic acid (PFHxS)	**0.30**	< 0.53	**0.56**	< 0.48	**1.10**	< 0.45	**1.90**	**1.50**	**0.68**	**0.53**	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	< 0.231	< 0.227	< 0.252	< 0.234
Perfluorooctanesulfonic acid (PFOS)	**2.00**	**1.80**	**3.50**	**2.40**	**4.70**	**8.70**	**6.00**	**28.0**	**0.86**	< 0.43	< 0.43	**2.00**	< 0.5	< 0.54	< 0.52	< 0.45	< 0.231	< 0.227	**22.3**	**4.27**
Perfluorobutanoic Acid (PFBA)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	**2.20**	**2.20**	**0.48**	< 0.43	< 0.43	**0.71**	< 0.5	< 0.54	< 0.52	< 0.45	< 0.462	< 0.455	< 0.503	< 0.469
Perfluoropentanoic Acid (PFPeA)	NS	**0.64**	< 0.5	< 0.48	< 0.5	< 0.45	**1.90**	**2.60**	**0.49**	< 0.43	< 0.43	**0.85**	< 0.5	< 0.54	< 0.52	< 0.45	< 0.462	< 0.455	**0.51**	< 0.469
Perfluorohexanoic acid (PFHxA)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	**1.10**	**0.99**	< 0.42	< 0.43	< 0.43	**0.53**	< 0.5	< 0.54	< 0.52	< 0.45	< 0.462	< 0.455	< 0.503	< 0.469
Perfluoroundecanoic Acid (PFUnA)	NS	< 0.53	< 0.5	< 0.48	**0.99**	**1.80**	**1.30**	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	< 0.462	< 0.455	< 0.503	< 0.469
Perfluorododecanoic acid (PFDoDA)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	< 0.462	< 0.455	< 0.503	< 0.469
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	**1.20**	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	< 0.462	< 0.455	< 0.503	< 0.469
Perfluorotetradecanoic acid (PFTeDA)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	< 0.462	< 0.455	< 0.503	< 0.469
Perfluorobutanesulfonic acid (PFBS)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	< 0.231	< 0.227	< 0.252	< 0.234
Perfluoropentanesulfonic Acid (PFPeS)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	< 0.924	< 0.909	< 1.01	< 0.938
Perfluoroheptanesulfonic Acid (PFHpS)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	< 0.462	< 0.455	< 0.503	< 0.469
Perfluorononanesulfonic Acid (PFNS)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	< 0.924	< 0.909	< 1.01	< 0.938
Perfluorodecanesulfonic acid (PFDS)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	< 0.462	< 0.455	< 0.503	< 0.469
Perfluorooctane Sulfonamide (PFOSA)	NS	< 0.53	< 0.5	< 0.48	**1.40**	< 0.45	**1.30**	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	< 0.462	< 0.455	< 0.503	< 0.469
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	< 0.462	< 0.455	< 0.503	< 0.469
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	< 0.462	< 0.455	< 0.503	< 0.469
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	< 0.924	< 0.909	< 1.01	< 0.938
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	< 0.462	< 0.455	< 0.503	< 0.469
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	< 0.53	< 0.5	< 0.48	**0.55**	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	< 0.462	< 0.455	< 0.503	< 0.469
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	---	---	---	---
Perfluoro-1-butanesulfonamide (FBSA)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	---	---	---	---
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	< 0.53	< 0.5	< 0.48	**0.55**	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	< 0.53	< 0.5	< 0.48	< 0.5	< 0.45	< 0.9	< 0.46	< 0.42	< 0.43	< 0.43	< 0.51	< 0.5	< 0.54	< 0.52	< 0.45	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in micrograms per kilogram (ug/kg; parts per billion (ppb)).
3. Massachusetts Contingency Plan (MCP) Method Standards for PFAS were obtained from 310 CMR 40.0975(6)(a,b,&c), updated March 1, 2024.
4. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
5. Yellow highlighted concentrations indicate an exceedance of the MCP Method 1 Standard. Underlined and italicized values indicate the analyte was not detected, but the reporting limit was above the Method 1 Standard.
6. Samples shaded gray were excavated and disposed of offsite as part of the hotspot excavation completed in January 2017.
7. Some of the hotspot excavation confirmatory samples were treated with RemBind to evaluate its effectiveness. These samples are identified as "TREATED" in the sample naming convention.
8. NS indicates no standard; RL indicates laboratory reporting limit; J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.

TABLE 2
SOIL ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sampling Event	MCP Method 1 S-1/GW-1, S-2/GW-1,& S-3/GW-1 Standards	VDT Borings/Well Installations					
Location ID		VDT-01	VDT-02D	VDT-02D	VDT-02D	VDT-04D	VDT-04D
Sample ID		VDT-01_0-9IN	VDT-02D (1-2')	VDT-02_5-6FT	VDT-02D (45-46')	VDT-04_0-9IN	VDT-04_9-12FT
Sample Depth		0-9 in	1-2 ft	5-6 ft	45-46 ft	0-9 in	9-12 ft
Sample Date		5/20/2024	5/20/2024	5/20/2024	5/20/2024	5/21/2024	5/21/2024
PFAS Compounds (ug/kg)							
Perfluoroheptanoic acid (PFHpA)	**0.50**	0.10 J	**0.078 J**	0.038 J	< 0.20	< 0.198	< 0.198
Perfluorooctanoic acid (PFOA)	**0.72**	**0.57**	**0.39**	0.133 J	< 0.20	< 0.198	< 0.198
Perfluorononanoic acid (PFNA)	**0.32**	0.157 J	< 0.20	< 0.199	< 0.20	< 0.198	< 0.198
Perfluorodecanoic acid (PFDA)	**0.30**	0.113 J	< 0.20	< 0.199	< 0.20	< 0.198	< 0.198
Perfluorohexanesulfonic acid (PFHxS)	**0.30**	**0.34**	**0.25**	0.177 J	< 0.18	< 0.198	< 0.198
Perfluorooctanesulfonic acid (PFOS)	**2.00**	**4.53**	**0.98**	**0.26**	**0.22**	**0.112 J**	**0.084 J**
Perfluorobutanoic Acid (PFBA)	NS	0.224 J	**0.071 J**	< 0.796	< 0.80	< 0.791	< 0.792
Perfluoropentanoic Acid (PFPeA)	NS	0.123 J	**0.069 J**	< 0.398	< 0.40	< 0.396	< 0.396
Perfluorohexanoic acid (PFHxA)	NS	0.180 J	**0.13 J**	< 0.199	< 0.20	< 0.198	< 0.198
Perfluoroundecanoic Acid (PFUnA)	NS	0.072 J	< 0.20	< 0.199	< 0.20	< 0.198	< 0.198
Perfluorododecanoic acid (PFDoDA)	NS	< 0.199	< 0.20	< 0.199	< 0.20	< 0.198	< 0.198
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	NS	< 0.199	< 0.20	< 0.199	< 0.20	< 0.198	< 0.198
Perfluorotetradecanoic acid (PFTeDA)	NS	< 0.199	< 0.20	< 0.199	< 0.20	< 0.198	< 0.198
Perfluorobutanesulfonic acid (PFBS)	NS	< 0.199	< 0.18	< 0.199	< 0.18	< 0.198	< 0.198
Perfluoropentanesulfonic Acid (PFPeS)	NS	< 0.199	< 0.19	< 0.199	< 0.19	< 0.198	< 0.198
Perfluoroheptanesulfonic acid (PFHpS)	NS	0.037 J	< 0.19	< 0.199	< 0.19	< 0.198	< 0.198
Perfluorononanesulfonic Acid (PFNS)	NS	< 0.199	< 0.19	< 0.199	< 0.19	< 0.198	< 0.198
Perfluorodecanesulfonic acid (PFDS)	NS	< 0.199	< 0.19	< 0.199	< 0.19	< 0.198	< 0.198
Perfluorooctane Sulfonamide (PFOSA)	NS	< 0.199	< 0.20	< 0.199	< 0.20	< 0.198	< 0.198
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	NS	< 1.99	< 2.0	< 1.99	< 2.0	< 1.98	< 1.98
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	NS	< 1.99	< 2.0	< 1.99	< 2.0	< 1.98	< 1.98
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	< 0.199	< 0.20	< 0.199	< 0.20	< 0.198	< 0.198
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	< 0.199	< 0.20	< 0.199	< 0.20	< 0.198	< 0.198
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	NS	< 0.199	< 0.20	< 0.199	< 0.20	< 0.198	< 0.198
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	NS	< 0.199	< 0.20	< 0.199	< 0.20	< 0.198	< 0.198
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	NS	< 0.796	< 0.75	< 0.796	< 0.75	< 0.791	< 0.792
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	NS	< 0.796	< 0.76	< 0.796	< 0.76	< 0.791	< 0.792
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	NS	< 0.796	< 0.77	< 0.796	< 0.77	< 0.791	< 0.792
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NS	< 0.398	< 0.36	< 0.398	< 0.36	< 0.396	< 0.396
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	< 0.398	< 0.4	< 0.398	< 0.40	< 0.396	< 0.396
Perfluoro-4-methoxybutanoic acid (PFMBA)	NS	< 0.398	< 0.4	< 0.398	< 0.40	< 0.396	< 0.396
Perfluoro-1-butanesulfonamide (FBSA)	NS	< 0.398	---	< 0.398	---	< 0.396	< 0.396
Perfluoro-1-hexanesulfonamide (FHxSA)	NS	< 0.796	---	< 0.796	---	< 0.791	< 0.792
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NS	< 0.796	< 4.0	< 0.796	< 4.0	< 0.791	< 0.792
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	NS	< 0.796	< 0.8	< 0.796	< 0.80	< 0.791	< 0.792
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NS	< 0.796	< 0.76	< 0.796	< 0.76	< 0.791	< 0.792
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	NS	< 0.796	< 0.75	< 0.796	< 0.75	< 0.791	< 0.792
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	< 0.796	< 0.76	< 0.796	< 0.76	< 0.791	< 0.792

TABLE 3
FLINTROCK POND SEDIMENT ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sample Name	POND DELTA	POND NORTH	POND SOUTH	POND 1D	POND 1S	POND 2D	POND 2S	POND 3	SED-1/101		SED-2/201			SED-3/301		SED-4/401	
									SED-1	SED-101	SED-2	FIELD DUPLICATE	SED-201	SED-3	SED-301	SED-4	SED-401
Sample Date	3/15/2015	3/15/2015	3/15/2015	6/18/2015	6/18/2015	6/18/2015	6/18/2015	6/18/2015	11/16/2018	3/27/2019	11/16/2018	11/16/2018	3/27/2019	11/16/2018	3/27/2019	11/16/2018	3/27/2019
PFAS Compounds (ug/kg)																	
Perfluoroheptanoic acid (PFHpA)	< 10	< 50	< 50	**0.13**	**0.17**	**0.18**	**0.07**	**0.10**	**0.48**	< 2.0	< 10	< 10	< 5.0	**4.40**	< 10	**0.63**	< 2.0
Perfluorooctanoic acid (PFOA)	< 10	< 50	< 50	**0.19**	**0.23**	**0.36**	**0.10**	< 0.10	< 2.0	< 2.0	< 10	< 10	< 5.0	< 20	< 10	**0.87**	< 2.0
Perfluorononanoic acid (PFNA)	< 10	**7.60**	**16**	**0.73**	**0.46**	**2.10**	**0.17**	< 0.10	**0.62**	**0.39**	**3.10**	**4.10**	**2.30**	**8.60**	**3.50**	**1.10**	**3.90**
Perfluorodecanoic acid (PFDA)	< 10	< 50	< 50	**0.25**	**0.22**	**1.00**	**0.07**	**0.06**	< 2.0	< 2.0	< 10	< 10	< 5.0	**6.10**	< 10	**1.40**	< 2.0
Perfluorohexanesulfonic acid (PFHxS)	< 10	**30**	**23**	**0.69**	**0.86**	**1.10**	**0.32**	**0.36**	**0.73**	**0.76**	**2.80**	**2.70**	**2.40**	**7.20**	**4.80**	**7.60**	**6.20**
Perfluorooctanesulfonic acid (PFOS)	**41**	**1000**	**1100**	**23**	**19**	**34**	**11**	**8.70**	**12**	**13**	**90**	**110**	**67**	**170**	**150**	**49**	**78**
Perfluorobutanoic Acid (PFBA)	< 10	< 50	< 50	**0.07**	< 0.20	< 0.10	**0.03**	**0.04**	< 2.0	< 2.0	< 10	< 10	< 5.0	< 20	< 10	< 2.0	< 2.0
Perfluoropentanoic Acid (PFPeA)	< 10	**19**	< 50	**0.18**	**0.34**	**0.16**	< 0.10	**0.22**	**1.80**	**0.65**	< 10	< 10	**1.60**	< 20	**2.00**	**0.83**	**2.80**
Perfluorohexanoic acid (PFHxA)	< 10	< 50	< 50	**0.31**	**0.54**	**0.37**	**0.21**	**0.32**	**0.73**	**0.45**	**1.60**	**1.70**	**1.10**	**4.00**	**1.90**	**1.50**	**2.70**
Perfluoroundecanoic Acid (PFUnA)	< 10	**15**	**21**	**1.60**	**2.80**	**0.81**	**1.90**	**0.40**	**1.70**	**2.50**	**11**	**13**	**11**	**31**	**19**	**7.40**	**9.90**
Perfluorododecanoic acid (PFDoDA)	< 10	< 50	< 50	< 0.10	< 0.20	< 0.10	**0.04**	**0.03**	**1.10**	**0.83**	< 10	< 10	**2.90**	**9.90**	**4.30**	**14**	**9.80**
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	**1.80**	< 50	< 50	**0.15**	**0.74**	< 0.10	**0.14**	**0.38**	**6.30**	**5.10**	**7.90**	**7.00**	**17**	**44**	**30**	**40**	**52**
Perfluorotetradecanoic acid (PFTeDA)	< 10	< 50	< 50	< 0.10	< 0.20	< 0.10	< 0.10	< 0.10	**0.80**	**0.43**	< 10	< 10	**1.20**	< 20	**2.10**	**17**	**9.30**
Perfluorobutanesulfonic acid (PFBS)	< 10	< 50	< 50	**0.06**	**0.06**	**0.07**	**0.03**	**0.04**	< 2.0	< 2.0	< 10	< 10	< 5.0	< 20	< 10	**0.70**	< 2.0
Perfluoroheptanesulfonic acid (PFHpS)	--	--	--	--	--	--	--	--	< 2.0	< 2.0	< 10	< 10	< 5.0	< 20	< 10	< 2.0	< 2.0
Perfluorodecanesulfonic acid (PFDS)	< 10	< 50	< 50	**0.07**	**0.16**	**0.04**	**0.07**	**0.06**	< 2.0	< 2.0	< 10	< 10	< 5.0	< 20	< 10	**9.60**	**8.70**
Perfluorooctane Sulfonamide (PFOSA)	< 10	< 50	**11**	**0.16**	**0.42**	**0.02**	**0.09**	**0.07**	**0.84**	**0.55**	**5.90**	**7.50**	**2.00**	**4.80**	**5.20**	**14**	**8.90**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	--	--	--	--	--	--	--	--	< 2.0	< 2.0	< 10	< 10	< 5.0	< 20	< 10	< 2.0	< 2.0
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	--	--	--	--	--	--	--	--	< 2.0	< 2.0	< 10	< 10	< 5.0	< 20	< 10	< 2.0	< 2.0
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	--	--	--	--	--	--	--	--	< 2.0	< 2.0	< 10	< 10	< 5.0	< 20	< 10	< 2.0	< 2.0
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	--	--	--	--	--	--	--	--	< 2.0	< 2.0	< 10	< 10	< 5.0	< 20	< 10	< 2.0	< 2.0
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	--	--	--	--	--	--	--	--	**1.60**	**0.82**	< 10	< 10	< 5.0	< 20	< 10	**4.40**	**8.70**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	--	--	--	--	--	--	--	--	< 2.0	< 2.0	< 10	< 10	< 5.0	< 20	< 10	**4.40**	**8.80**
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perfluoropentanesulfonic Acid (PFPeS)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perfluorononanesulfonic Acid (PFNS)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perfluoro-3-methoxypropanoic acid (PFMPA)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perfluoro-4-methoxybutanoic acid (PFMBA)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perfluoro-1-butanesulfonamide (FBSA)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perfluoro-1-hexanesulfonamide (FHxSA)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
General Chemistry																	
Total Iron (mg/kg)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Organic Carbon (TOC) (mg/kg)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH (S.U.)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity (umhos/cm)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORP (mV)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
% Solids	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in micrograms per kilogram (ug/kg; parts per billion (ppb)) unless noted next to the analyte name or parameter above.
3. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
4. J indicates an estimated value; - indicates the sample was not analyzed for that particular compound.

TABLE 3
FLINTROCK POND SEDIMENT ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sample Name	SED-5/501			SED-6	SED-7A	SED-7B	SED-8A	SED-8B	FRP-101	FRP-102	FRP-103	FRP-104	FRP-105	FRP-106	FRP-107	FRP-108	FRP-109	FRP-110	FRP-111	FRP-112	FRP-113	FRP-114	FRP-115
	SED-5	SED-501	SED-DUPLICATE																				
Sample Date	11/16/2018	3/27/2019	3/27/2019	11/16/2018	10/20/2020	10/20/2020	10/20/2020	10/20/2020	8/18/2022	8/18/2022	8/18/2022	8/18/2022	8/17/2022	8/17/2022	8/17/2022	8/18/2022	8/18/2022	8/18/2022	8/24/2022	8/24/2022	8/24/2022	8/24/2022	8/24/2022
PFAS Compounds (ug/kg)																							
Perfluoroheptanoic acid (PFHpA)	< 10	< 10	< 5.0	**5.10**	< 1.0	**0.70**	**6.50**	< 1.0	**1.30**	< 0.34	< 0.17	< 0.51	< 1.7	< 3.4	< 17	< 34	< 3.4	< 34	< 3.4	< 3.4	< 3.4	< 0.85	< 3.4
Perfluorooctanoic acid (PFOA)	< 10	< 10	< 5.0	< 20	< 1.0	**0.98**	**9.30**	< 1.0	**2.90**	**0.78**	< 0.2	< 0.6	< 2	< 4	< 20	< 40	< 4	< 40	**4.90**	**4.10**	**3.50**	**1.20**	< 3.4
Perfluorononanoic acid (PFNA)	**3.10**	**2.50**	**3.40**	**11**	< 1.0	**4.30**	**14**	< 1.0	**7.10**	**7.60**	< 0.27	< 0.81	< 2.7	< 5.4	< 27	< 54	< 5.4	< 54	**10**	**9.40**	**11**	**2.00**	**6.00**
Perfluorodecanoic acid (PFDA)	< 10	< 10	< 5.0	**6.30**	< 1.0	**3.70**	**8.00**	< 1.0	**4.70**	**0.64**	< 0.24	< 0.72	< 2.4	< 4.8	< 24	< 48	< 4.8	< 48	**4.10**	**3.90**	**3.20**	**0.88**	**2.80**
Perfluorohexanesulfonic acid (PFHxS)	**2.90**	**3.00**	**4.10**	**10**	< 1.0	**3.90**	**15**	< 1.0	**11**	**3.00**	< 0.3	< 0.9	< 3	< 6	< 30	< 60	< 6	< 60	**8.70**	**8.70**	**7.90**	**1.40**	**4.80**
Perfluorooctanesulfonic acid (PFOS)	**120**	**72**	**89**	**280**	**2.70**	**130**	**180**	**4.00**	**92**	**36**	**4.10**	**25**	**95**	**140**	< 27	< 54	**270**	**100**	**310**	**240**	**350**	**26**	**200**
Perfluorobutanoic Acid (PFBA)	< 10	< 10	**1.20**	< 20	< 1.0	< 4.0	< 10	< 1.0	< 0.72	< 0.48	< 0.24	< 0.72	< 2.4	< 4.8	< 24	< 48	< 4.8	< 48	< 2.8	< 2.8	< 2.8	< 0.7	< 2.8
Perfluoropentanoic Acid (PFPeA)	< 10	**2.30**	**1.20**	< 20	< 1.0	< 4.0	**2.40**	< 1.0	**2.60**	< 0.46	< 0.23	< 0.69	< 2.3	< 4.6	< 23	< 46	< 4.6	< 46	< 3.4	< 3.4	**6.00**	< 0.85	**6.30**
Perfluorohexanoic acid (PFHxA)	**1.40**	< 10	**1.30**	< 20	< 1.0	**0.98**	**3.20**	< 1.0	**2.20**	**0.57**	< 0.16	< 0.48	< 1.6	< 3.2	< 16	< 32	< 3.2	< 32	**3.50**	**3.30**	< 3	**0.84**	< 3
Perfluoroundecanoic Acid (PFUnA)	**8.90**	**12**	**13**	**32**	**0.83**	**54**	**71**	**0.79**	**53**	**3.70**	**2.20**	**1.90**	**13**	**19**	< 25	< 50	**23**	< 50	**35**	**32**	**17**	**6.10**	**41**
Perfluorododecanoic acid (PFDoDA)	< 10	**3.10**	**3.50**	< 20	< 1.0	**3.80**	**14**	< 1.0	**2.10**	< 0.38	< 0.19	< 0.57	< 1.9	< 3.8	< 19	< 38	< 3.8	< 38	**8.90**	**9.40**	< 3.2	**2.20**	**5.40**
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	**18**	**21**	**22**	**9.90**	**0.84**	**12**	**60**	**0.70**	**7.60**	< 0.44	< 0.22	< 0.66	**11**	**41**	< 22	< 44	**37**	< 44	**75**	**41 (1)**	< 24 (1)	**20**	**86**
Perfluorotetradecanoic acid (PFTeDA)	< 10	**2.20**	**2.10**	< 20	< 1.0	< 4.0	**3.10**	< 1.0	< 0.9	< 0.6	< 0.3	< 0.9	< 3	< 6	< 30	< 60	< 6	< 60	**4.90**	< 26 (1)	< 26 (1)	**1.10**	**2.90**
Perfluorobutanesulfonic acid (PFBS)	< 10	< 10	< 5.0	< 20	< 1.0	< 4.0	< 10	< 1.0	< 0.51	< 0.34	< 0.17	< 0.51	< 1.7	< 3.4	< 17	< 34	< 3.4	< 34	< 3	< 3	< 3	< 0.75	< 3
Perfluoroheptanesulfonic acid (PFHpS)	< 10	< 10	< 5.0	< 20	< 1.0	< 4.0	< 10	< 1.0	< 0.51	< 0.34	< 0.17	< 0.51	< 1.7	< 3.4	< 17	< 34	< 3.4	< 34	< 4.2	< 4.2	< 4.2	< 1.1	< 4.2
Perfluorodecanesulfonic acid (PFDS)	< 10	< 10	< 5.0	< 20	< 1.0	**1.40**	**3.00**	< 1.0	< 0.81	< 0.54	< 0.27	< 0.81	< 2.7	< 5.4	< 27	< 54	< 5.4	< 54	< 4.2	< 4.2	< 4.2	< 1.1	< 4.2
Perfluorooctane Sulfonamide (PFOSA)	**2.70**	< 10	< 5.0	**10**	< 1.0	**1.00**	< 10	< 1.0	< 0.6	< 0.4	< 0.2	< 0.6	< 2	< 4	< 20	< 40	< 4	< 40	**2.70**	**2.40**	< 2	**0.73**	**4.80**
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	< 10	< 10	< 5.0	< 20	< 1.0	< 4.0	< 10	< 1.0	< 0.66	< 0.44	< 0.22	< 0.66	< 2.2	< 4.4	< 22	< 44	< 4.4	< 44	< 6.8	< 6.8	< 6.8	< 1.7	< 6.8
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	< 10	< 10	< 5.0	< 20	< 1.0	< 4.0	< 10	< 1.0	< 0.87	< 0.58	< 0.29	< 0.87	< 2.9	< 5.8	< 29	< 58	< 5.8	< 58	< 7.4	< 7.4	< 7.4	< 1.9	< 7.4
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	< 10	< 10	< 5.0	< 20	< 1.0	< 4.0	< 10	< 1.0	< 0.93	< 0.62	< 0.31	< 0.93	< 3.1	< 6.2	< 31	< 62	< 6.2	< 62	< 7.6	< 7.6	< 7.6	< 1.9	< 7.6
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	< 10	< 10	< 5.0	< 20	< 1.0	< 4.0	< 10	< 1.0	< 1.2	< 0.78	< 0.39	< 1.2	< 3.9	< 7.8	< 39	< 78	< 7.8	< 78	< 9	< 9	< 9	< 2.3	< 9
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	< 10	**3.90**	**5.80**	< 20	< 1.0	< 4.0	< 10	< 1.0	< 0.9	< 0.6	< 0.3	< 0.9	< 3	< 6	< 30	< 60	< 6	< 60	< 4.8	< 4.8	< 4.8	< 1.2	**7.20**
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	< 10	**4.50**	**4.70**	< 20	< 1.0	**1.40**	**7.00**	< 1.0	**1.80**	< 0.6	< 0.3	< 0.9	< 3	< 6	< 30	< 60	< 6	< 60	**5.90**	< 5.2	< 5.2	< 1.3	< 5.2
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perfluoropentanesulfonic Acid (PFPeS)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perfluorononanesulfonic Acid (PFNS)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perfluoro-3-methoxypropanoic acid (PFMPA)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perfluoro-4-methoxybutanoic acid (PFMBA)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perfluoro-1-butanesulfonamide (FBSA)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perfluoro-1-hexanesulfonamide (FHxSA)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
General Chemistry																							
Total Iron (mg/kg)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4,500	--	5,000	3,670	2,640	1,870	3,370
Total Organic Carbon (TOC) (mg/kg)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	310,000	--	253,000	303,000	308,000	281,000	355,000
pH (S.U.)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.73	5.94	6.17	5.35	5.99
Conductivity (umhos/cm)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	73	73	40	89	50
ORP (mV)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	174	283	328	336	344
% Solids	--	--	--	--	--	--	--	--	43	61	72	42	13	5	14	6	5	5	5	5	5	24	6

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in micrograms per kilogram (ug/kg; parts per billion (ppb)) unless noted next to the analyte name or parameter above.
3. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
4. J indicates an estimated value; - indicates the sample was not analyzed for that particular compound.

TABLE 3
FLINTROCK POND SEDIMENT ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sample Name	FRP-116	FRP-117	FRP-118	FRP-119	FRP-120	FRP-121	FRP-122		SB-FRP		SED-X	PW-1	PW-2	PW-3
							FRP-122	FRP-DUP	SB-FRP 0-1'	SB-FRP 1-2'				
Sample Date	8/24/2022	8/24/2022	8/24/2022	8/24/2022	8/24/2022	8/24/2022	8/24/2022	8/24/2022	8/18/2022	8/18/2022	7/27/2022	10/8/2022	10/8/2022	10/8/2022
PFAS Compounds (ug/kg)														
Perfluoroheptanoic acid (PFHpA)	**4.10**	< 3.4	< 3.4	**4.20**	< 3.4	< 3.4	< 3.4	< 3.4	< 0.17	< 0.17	**4.60**	< 4.9	< 6.5	< 9.6
Perfluorooctanoic acid (PFOA)	**4.50**	**4.00**	**3.80**	**5.40**	**4.90**	< 4	< 4	< 4	**0.21**	< 0.2	**4.70**	< 4.9	< 6.5	< 9.6
Perfluorononanoic acid (PFNA)	**8.00**	**9.10**	**12**	**11**	**12**	**7.00**	< 5.4	< 5.4	**1.40**	**1.10**	**14**	< 4.9	**8.00**	< 9.6
Perfluorodecanoic acid (PFDA)	**2.90**	**3.70**	**3.40**	**5.00**	**4.10**	< 4.8	< 4.8	< 4.8	**0.59**	< 0.24	< 4.8	< 4.9	< 6.5	< 9.6
Perfluorohexanesulfonic acid (PFHxS)	**5.00**	**7.60**	**9.20**	**9.40**	**11**	**6.40**	< 6	< 6	**0.59**	< 0.3	**9.60**	< 4.9	< 6.5	< 9.6
Perfluorooctanesulfonic acid (PFOS)	**110**	**260**	**370**	**230**	**460**	**390**	**240**	**170**	**26**	**18**	**100**	**19.0**	**33.0**	**37.0**
Perfluorobutanoic Acid (PFBA)	< 2.8	< 2.8	< 2.8	< 2.8	< 2.8	< 4.8	< 4.8	< 4.8	< 0.24	< 0.24	< 4.8	< 4.9	< 6.5	< 9.6
Perfluoropentanoic Acid (PFPeA)	**5.10**	**3.70**	< 3.4	**5.00**	< 3.4	< 4.6	< 4.6	< 4.6	< 0.23	< 0.23	< 4.6	**50.0**	< 6.5	< 9.6
Perfluorohexanoic acid (PFHxA)	**3.60**	**3.00**	**4.20**	**4.20**	**4.20**	< 3.2	< 3.2	< 3.2	< 0.16	< 0.16	**5.70**	< 4.9	< 6.5	< 9.6
Perfluoroundecanoic Acid (PFUnA)	**16**	**29**	**38**	**36**	**38**	**34**	**22**	**19**	**0.41**	< 0.25	< 50	< 4.9	< 6.5	< 9.6
Perfluorododecanoic acid (PFDoDA)	**4.30**	**7.50**	**5.60**	**11**	**10**	**6.70**	< 3.8	< 3.8	< 0.19	< 0.19	< 38	< 4.9	< 6.5	< 9.6
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	**19**	**58**	**74**	**35**	**51**	**74**	**21**	**26**	< 0.22	< 0.22	< 44	< 4.9	< 6.5	< 9.6
Perfluorotetradecanoic acid (PFTeDA)	< 2.6	**4.00**	< 2.6	< 26	< 26	**8.50**	< 6	< 6	< 0.3	< 0.3	< 60	< 4.9	< 6.5	< 9.6
Perfluorobutanesulfonic acid (PFBS)	< 3	< 3	< 3	< 3	< 3	< 3.4	< 3.4	< 3.4	< 0.17	< 0.17	< 3.4	< 4.9	< 6.5	< 9.6
Perfluoroheptanesulfonic acid (PFHpS)	< 4.2	< 4.2	< 4.2	< 4.2	< 4.2	< 3.4	< 3.4	< 3.4	< 0.17	< 0.17	< 3.4	< 4.9	< 6.5	< 9.6
Perfluorodecanesulfonic acid (PFDS)	< 4.2	< 4.2	< 4.2	< 4.2	< 4.2	< 5.4	< 5.4	< 5.4	< 0.27	< 0.27	< 5.4	< 4.9	< 6.5	< 9.6
Perfluorooctane Sulfonamide (PFOSA)	< 2	**2.60**	**4.10**	**2.70**	**3.80**	< 4	< 4	< 4	< 0.2	< 0.2	< 40	< 4.9	< 6.5	< 9.6
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	< 6.8	< 6.8	< 6.8	< 6.8	< 6.8	< 6.8	< 4.4	< 4.4	< 0.22	< 0.22	< 44	NS	NS	NS
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	< 7.4	< 7.4	< 7.4	< 7.4	< 7.4	< 7.4	< 7.4	< 7.4	< 0.29	< 0.29	< 58	NS	NS	NS
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	< 7.6	< 7.6	< 7.6	< 7.6	< 7.6	< 7.6	< 7.6	< 7.6	< 0.31	< 0.31	< 62	NS	NS	NS
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	< 9	< 9	< 9	< 9	< 9	< 9	< 9	< 9	< 0.39	< 0.39	< 78	NS	NS	NS
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 0.3	< 0.3	< 6	**12.0**	< 6.5	< 9.6
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	< 5.2	< 5.2	< 5.2	< 5.2	**6.20**	< 6	**6.00**	**5.40**	< 0.3	< 0.3	< 6	< 4.9	< 6.5	< 9.6
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	--	--	--	--	--	--	--	--	--	--	--	< 4.9	< 6.5	< 9.6
Perfluoropentanesulfonic Acid (PFPeS)	--	--	--	--	--	--	--	--	--	--	--	< 4.9	< 6.5	< 9.6
Perfluorononanesulfonic Acid (PFNS)	--	--	--	--	--	--	--	--	--	--	--	< 4.9	< 6.5	< 9.6
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	--	--	--	--	--	--	--	--	--	--	--	< 4.9	< 6.5	< 9.6
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	--	--	--	--	--	--	--	--	--	--	--	< 4.9	< 6.5	< 9.6
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	--	--	--	--	--	--	--	--	--	--	--	< 4.9	< 6.5	< 9.6
Perfluoro-3-methoxypropanoic acid (PFMPA)	--	--	--	--	--	--	--	--	--	--	--	< 4.9	< 6.5	< 9.6
Perfluoro-4-methoxybutanoic acid (PFMBA)	--	--	--	--	--	--	--	--	--	--	--	< 4.9	< 6.5	< 9.6
Perfluoro-1-butanesulfonamide (FBSA)	--	--	--	--	--	--	--	--	--	--	--	< 4.9	< 6.5	< 9.6
Perfluoro-1-hexanesulfonamide (FHxSA)	--	--	--	--	--	--	--	--	--	--	--	< 4.9	< 6.5	< 9.6
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	--	--	--	--	--	--	--	--	--	--	--	< 4.9	< 6.5	< 9.6
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	--	--	--	--	--	--	--	--	--	--	--	< 4.9	< 6.5	< 9.6
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	--	--	--	--	--	--	--	--	--	--	--	< 4.9	< 6.5	< 9.6
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	--	--	--	--	--	--	--	--	--	--	--	< 4.9	< 6.5	< 9.6
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	--	--	--	--	--	--	--	--	--	--	--	< 4.9	< 6.5	< 9.6
General Chemistry														
Total Iron (mg/kg)	2,550	6,190	3,930	4,610	5,920	5,320	3,300	3,900	620	3400	--	--	--	--
Total Organic Carbon (TOC) (mg/kg)	327,000	290,000	286,000	279,000	269,000	261,000	228,000	267,000	24,000	5,500	--	--	--	--
pH (S.U.)	6.00	6.25	6.23	5.90	6.19	6.12	6.21	6.25	--	--	--	--	--	--
Conductivity (umhos/cm)	58	65	59	67	64	70	57	57	--	--	--	--	--	--
ORP (mV)	333	321	319	316	306	297	299	277	--	--	--	--	--	--
% Solids	5	5	5	4	5	5	5	6	74	81	6	8.83	6.38	4.51

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in micrograms per kilogram (ug/kg; parts per billion (ppb)) unless noted next to the analyte name or parameter above.
3. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
4. J indicates an estimated value; - indicates the sample was not analyzed for that particular compound.

TABLE 4
FLINTROCK POND SURFACE WATER ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	FR-POND-1-SW		FR-POND-SW							FR-RUNOFF		FR-SW-201	FR-SW-301	FR-SW-401		FR-SW-501	
Sample Name	POND D1 WS	POND S1 WS	POND FR	POND GRAB	POND FR	FLINT ROCK POND	POND	POND-FRP	FLINT ROCK	RUN OFF	OVERLAND RUNOFF	SW-201	SW-301	SW-401D	SW-401S	SW-501D	SW-501S
Sample Date	6/18/2015	6/18/2015	4/2/2015	3/31/2016	7/6/2016	12/8/2016	4/10/2017	8/16/2017	11/17/2017	12/8/2016	11/16/2018	11/16/2018	3/27/2019	10/28/2019	10/28/2019	10/20/2020	10/20/2020
Analyte (ng/L)																	
Perfluoroheptanoic acid (PFHpA)	**170**	**180**	**120**	**100**	**110**	**170**	**95.0**	**120**	**97.0**	< 20	< 20	**62.0**	**37.0**	**46.0**	**47.0**	**51.0**	**52.0**
Perfluorooctanoic acid (PFOA)	**160**	**140**	**100**	**97.0**	**110**	**130**	**87.0**	**92.0**	**95.0**	< 20	< 20	**44.0**	**26.0**	**30.0**	**32.0**	**36.0**	**38.0**
Perfluorononanoic acid (PFNA)	**95.0**	**94.0**	**60.0**	**110**	**78.0**	**110**	**100**	**130**	**210**	< 20	< 20	**52.0**	**33.0**	**44.0**	**63.0**	**44.0**	**46.0**
Perfluorodecanoic acid (PFDA)	**17 J**	**11 J**	---	**26.0**	**15 J**	**19 J**	**27.0**	**43.0**	**75.0**	< 20	< 20	**8.5 J**	< 20	**5.90**	**10.0**	**7.0 J**	**8.1 J**
Perfluorohexanesulfonic acid (PFHxS)	**560**	**550**	**420**	**340**	**310**	**390**	**270**	**260**	**210**	**6.5 J**	< 20	**110**	**63.0**	**74.0**	**74.0**	**67.0**	**69.0**
Perfluorooctanesulfonic acid (PFOS)	**2400**	**2500**	**1600**	**2700**	**1500**	**1300**	**1500**	**2000**	**3500**	**16 J**	**31.0**	**400**	**270**	**330**	**560**	**260**	**300**
PFAS SUM	**3402**	**3475**	**2300**	**3373**	**2123**	**2119**	**2079**	**2645**	**4187**	**22.5**	**31.0**	**677**	**429**	**530**	**786**	**465**	**513**
Perfluorobutanoic Acid (PFBA)	**78.0**	**79.0**	---	**54.0**	**60.0**	**65.0**	**31.0**	**41.0**	**42.0**	< 20	< 20	**27.0**	**16 J**	**15.0**	**15.0**	**23.0**	**25.0**
Perfluoropentanoic Acid (PFPeA)	**270**	**270**	---	**150**	**170**	**200**	**150**	**160**	**120**	**8.5 J**	**14 J**	**70.0**	**41.0**	**49.0**	**48.0**	**46.0**	**46.0**
Perfluorohexanoic acid (PFHxA)	**430**	**440**	---	**260**	**300**	**350**	**190**	**230**	**220**	< 20	**14 J**	**89.0**	**52.0**	**58.0**	**59.0**	**53.0**	**56.0**
Perfluoroundecanoic Acid (PFUnA)	**15 J**	**6.4 J**	---	**19 J**	**19 J**	**18 J**	**35.0**	**67.0**	**98.0**	**3.9 J**	**4.7 J**	**10 J**	< 20	**8.60**	**15.0**	< 20	**6.2 J**
Perfluorododecanoic acid (PFDoDA)	< 20	< 20	---	< 20	< 20	< 20	< 20	< 19	< 20	< 20	< 20	< 20	< 20	< 6.8	< 6.8	< 20	< 20
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	**6.8 J**	**6.1 J**	---	< 20	**8.5 J**	**7.3 J**	< 20	< 200	< 20	< 20	< 20	< 20	< 20	< 6.9	< 6.9	< 20	< 20
Perfluorotetradecanoic acid (PFTeDA)	**9.3 J**	**8.6 J**	---	< 20	**7.6 J**	< 20	< 20	< 200	< 20	< 20	< 20	< 20	< 20	< 6.7	< 6.7	< 20	< 20
Perfluorobutanesulfonic acid (PFBS)	**58.0**	**61.0**	< 90	**37.0**	**39.0**	**45.0**	**27.0**	**25.0**	**13 J**	< 20	< 20	**12 J**	< 20	< 5.1	**5.50**	< 20	< 20
Perfluoropentanesulfonic Acid (PFPeS)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoroheptanesulfonic acid (PFHpS)	**61.0**	**58.0**	---	**36.0**	**32.0**	**37.0**	**22.0**	**29.0**	**18 J**	< 20	< 20	**9.8 J**	**6.1 J**	**6.60**	**7.70**	< 20	< 20
Perfluorononanesulfonic Acid (PFNS)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluorodecanesulfonic acid (PFDS)	< 20	< 20	---	**4.6 J**	< 20	< 20	< 20	**8.8 J**	< 20	< 20	< 20	< 20	< 20	< 7.2	< 7.2	< 20	< 20
Perfluorooctane Sulfonamide (PFOSA)	< 20	< 20	---	< 20	< 20	< 20	< 20	< 19	< 20	< 20	< 20	< 20	< 20	< 6.6	< 6.6	< 20	< 20
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	< 50	< 50	---	< 20	< 20	< 20	< 20	< 19	< 20	< 20	< 20	< 20	< 20	< 6.6	< 6.6	< 20	< 20
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	< 50	< 50	---	< 20	< 20	< 20	< 20	< 19	**8.3 J**	< 20	< 20	< 20	< 20	< 9.4	< 9.4	< 20	< 20
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	< 50	< 50	---	< 20	< 20	< 20	< 20	< 19	< 20	< 20	< 20	< 20	< 20	< 9	< 9	< 20	< 20
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	< 50	< 50	---	< 20	< 20	< 20	< 20	< 19	< 20	< 20	< 20	< 20	< 20	< 3.5	< 3.5	< 20	< 20
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	**40 J**	**42 J**	---	**11 J**	**24.0**	**20 J**	**17 J**	**8.9 J**	< 20	**8.4 J**	**230**	**14 J**	< 20	**9.20**	**9.80**	< 20	< 20
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	< 50	< 50	---	**8.1 J**	**23.0**	< 20	**14 J**	**8.7 J**	**19 J**	< 20	< 20	< 20	< 20	< 5.9	< 5.9	< 20	< 20
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-3-methoxypropanoic acid (PFMPA)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Perfluoro-4-methoxybutanoic acid (PFMBA)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/l; parts per trillion (ppt)).
3. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
4. PFAS SUM is the sum of the six perfluoroalkyl substances shown above (PFHpA, PFOA, PFNA, PFDA, PFHxS, and PFOS) and highlighted in light gray. ND indicates none of the six PFAS were detected above the laboratory reporting limits.
5. J indicates an estimated value; - indicates the sample was not analyzed for that particular compound.

TABLE 4
FLINTROCK POND SURFACE WATER ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	FR-SW-401	FR-SW-402	FR-SW-403	FR-SW-404	FR-SW-GZA
Sample Name	SW-401 (FRP-107)	SW-402 (FRP-107)	SW-403	SW-404	FRP-SW-062024
Sample Date	8/17/2022	8/17/2022	8/17/2022	8/17/2022	6/20/2024
Analyte (ng/L)					
Perfluoroheptanoic acid (PFHpA)	**69.0**	**69.0**	**68.0**	**68.0**	**39.7**
Perfluorooctanoic acid (PFOA)	**47.0**	**46.0**	**46.0**	**46.0**	**33.5**
Perfluorononanoic acid (PFNA)	**50.0**	**51.0**	**48.0**	**50.0**	**31.7**
Perfluorodecanoic acid (PFDA)	**7.90**	**7.50**	**7.70**	**7.00**	**8.35**
Perfluorohexanesulfonic acid (PFHxS)	**70.0**	**70.0**	**68.0**	**68.0**	**46.7**
Perfluorooctanesulfonic acid (PFOS)	**250**	**250**	**250**	**240**	**138**
PFAS SUM	**494**	**494**	**488**	**479**	**298**
Perfluorobutanoic Acid (PFBA)	**21.0**	**22.0**	**21.0**	**21.0**	**18.6**
Perfluoropentanoic Acid (PFPeA)	**56.0**	**55.0**	**56.0**	**56.0**	**36.6**
Perfluorohexanoic acid (PFHxA)	**65.0**	**64.0**	**62.0**	**64.0**	**34.8**
Perfluoroundecanoic Acid (PFUnA)	**7.40**	**7.80**	**7.50**	**7.00**	**32.8**
Perfluorododecanoic acid (PFDoDA)	< 8	< 8	< 8	< 8	**2.68**
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	< 6.4	< 6.4	< 6.4	< 6.4	**2.79**
Perfluorotetradecanoic acid (PFTeDA)	< 6.8	< 6.8	< 6.8	< 6.8	< 1.55
Perfluorobutanesulfonic acid (PFBS)	**5.90**	**6.90**	**6.70**	**7.10**	**2.14**
Perfluoropentanesulfonic Acid (PFPeS)	---	---	---	---	**4.53**
Perfluoroheptanesulfonic acid (PFHpS)	**7.70**	**7.70**	**7.90**	**8.20**	**1.61**
Perfluorononanesulfonic Acid (PFNS)	---	---	---	---	0.511 J
Perfluorodecanesulfonic acid (PFDS)	< 6.4	< 6.4	< 6.4	< 6.4	0.805 J
Perfluorooctane Sulfonamide (PFOSA)	< 3.6	< 3.6	< 3.6	< 3.6	< 1.55
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	< 7	< 7	< 7	< 7	< 15.5
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	< 7.1	< 7.1	< 7.1	< 7.1	< 15.5
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	---	---	---	---	< 1.55
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	---	---	---	---	< 1.55
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	< 7	< 7	< 7	< 7	< 1.55
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	< 7.8	< 7.8	< 7.8	< 7.8	< 1.55
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	---	---	---	---	< 6.19
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	**7.60**	**7.70**	< 6.5	< 6.5	2.24 J
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	< 6.7	< 6.7	< 6.7	< 6.7	< 6.19
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	---	---	---	---	< 3.10
Perfluoro-3-methoxypropanoic acid (PFMPA)	---	---	---	---	< 3.10
Perfluoro-4-methoxybutanoic acid (PFMBA)	---	---	---	---	< 3.10
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	---	---	---	---	---
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	---	---	---	---	---
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	---	---	---	---	< 3.10
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	---	---	---	---	< 6.19
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	---	---	---	---	< 6.19

TABLE 5
MARY DUNN SEDIMENT ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sample Location / Sample Date	MDP-101 6/21/2023	MDP-102 6/21/2023	MDP-103 6/21/2023	MDP-104 6/21/2023	MDP-105 6/21/2023	MDP-106 6/21/2023	MDP-107 6/21/2023	MDP-108 6/21/2023	MDP-109 6/21/2023	MDP-110 6/21/2023	MDP-111 6/21/2023	MDP-112 6/21/2023	MDP-112 6/21/2023	MDP-113 6/21/2023	MDP-114 6/21/2023	MDP-115 6/21/2023	MDP-116 6/21/2023
PFAS Compounds (ug/kg)																	
Perfluoroheptanoic acid (PFHpA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluorooctanoic acid (PFOA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluorononanoic acid (PFNA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluorodecanoic acid (PFDA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluorohexanesulfonic acid (PFHxS)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluorooctanesulfonic acid (PFOS)	**16**	**1.8**	**7.7**	**11**	**20**	**20**	**15**	**9.9**	**12**	**12**	**6.1**	**1.5**	**12**	**20**	**4.4**	**6.9**	< 0.51
Perfluorobutanoic Acid (PFBA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluoropentanoic Acid (PFPeA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluorohexanoic acid (PFHxA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluoroundecanoic Acid (PFUnA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluorododecanoic acid (PFDoDA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluorotetradecanoic acid (PFTeDA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluorobutanesulfonic acid (PFBS)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluoropentanesulfonic Acid (PFPeS)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluoroheptanesulfonic acid (PFHpS)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluorononanesulfonic Acid (PFNS)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluorodecanesulfonic acid (PFDS)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluorooctane Sulfonamide (PFOSA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluoro-3-methoxypropanoic acid (PFMPA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluoro-4-methoxybutanoic acid (PFMBA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluoro-1-butanesulfonamide (FBSA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Perfluoro-1-hexanesulfonamide (FHxSA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	< 2	< 0.61	< 1.7	< 3.8	< 4.3	< 3.8	< 3.8	< 3.9	< 4.1	< 4.4	< 3.6	< 0.44	< 3.5	< 5.2	< 2.5	< 2.3	< 0.51

Notes:
1. Samples were collected by BETA on the dates indicated.
2. Concentrations are reported in micrograms per kilogram (ug/kg; parts per billion (ppb)).
3. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
4. J indicates an estimated value; - indicates the sample was not analyzed for that particular compound.

TABLE 6
MARY DUNN SURFACE WATER ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sample Name	POND MD	POND MD	MDP-SW1	MDP-SW2	MDP-SW3	MDP-SW-062024
Sample Date	7/6/2016	5/3/2017	6/21/2023	6/21/2023	6/21/2023	6/20/2024
Analyte (ng/L)						
Perfluoroheptanoic acid (PFHpA)	**27.0**	**20 J**	**4.00**	**3.40**	**4.00**	**2.14**
Perfluorooctanoic acid (PFOA)	**12 J**	**11 J**	**2.50**	**2.30**	**2.70**	**1.64**
Perfluorononanoic acid (PFNA)	**11 J**	**15 J**	**2.60**	**2.10**	**3.10**	**1.68**
Perfluorodecanoic acid (PFDA)	< 20 U	< 20 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.49
Perfluorohexanesulfonic acid (PFHxS)	**54.0**	**32.0**	**10.0**	**8.40**	**9.30**	**6.60**
Perfluorooctanesulfonic acid (PFOS)	**82.0**	**150**	**16.0**	**13.0**	**25.0**	**9.73**
PFAS SUM	**186**	**228**	**35.1**	**29.2**	**44.1**	**21.8**
Perfluorobutanoic Acid (PFBA)	**8.0 J**	< 20 U	**2.30**	< 1.8 U	**2.10**	3.16 J
Perfluoropentanoic Acid (PFPeA)	**29.0**	**16 J**	**3.50**	**7.80**	**3.60**	**3.16**
Perfluorohexanoic acid (PFHxA)	**37.0**	**18 J**	**3.90**	**3.30**	**4.00**	**2.27**
Perfluoroundecanoic Acid (PFUnA)	< 20 U	< 20 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.49
Perfluorododecanoic acid (PFDoDA)	< 20 U	< 20 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.49
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	**9.4 J**	< 20 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.49
Perfluorotetradecanoic acid (PFTeDA)	**8.2 J**	< 20 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.49
Perfluorobutanesulfonic acid (PFBS)	**15 J**	< 20 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.49
Perfluoropentanesulfonic Acid (PFPeS)	---	---	< 1.8 U	< 1.8 U	< 1.9 U	0.610 J
Perfluoroheptanesulfonic acid (PFHpS)	**7.9 J**	< 20 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.49
Perfluorononanesulfonic Acid (PFNS)	---	---	< 1.8 U	< 1.8 U	< 1.9 U	< 1.49
Perfluorodecanesulfonic acid (PFDS)	< 20 U	< 20 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.49
Perfluorooctane Sulfonamide (PFOSA)	< 20 U	< 20 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.49
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	**6.5 J**	< 20 U	---	---	---	< 14.9
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	**9.0 J**	< 20 U	---	---	---	< 14.9
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	---	---	< 1.8 U	< 1.8 U	< 1.9 U	< 1.49
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	---	---	< 1.8 U	< 1.8 U	< 1.9 U	< 1.49
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	< 20 U	< 20 U	---	---	---	< 1.49
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	< 20 U	< 20 U	---	---	---	< 1.49
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	---	---	< 1.8 U	< 1.8 U	< 1.9 U	< 5.96
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	< 20 U	< 20 U	< 1.8 U	< 1.8 U	< 1.9 U	< 5.96
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	< 20 U	< 20 U	< 1.8 U	< 1.8 U	< 1.9 U	< 5.96
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	---	---	< 1.8 U	< 1.8 U	< 1.9 U	< 2.98
Perfluoro-3-methoxypropanoic acid (PFMPA)	---	---	< 1.8 U	< 1.8 U	< 1.9 U	< 2.98
Perfluoro-4-methoxybutanoic acid (PFMBA)	---	---	< 1.8 U	< 1.8 U	< 1.9 U	< 2.98
Perfluoro-1-butanesulfonamide (FBSA)	---	---	< 1.8 U	< 1.8 U	< 1.9 U	---
Perfluoro-1-hexanesulfonamide (FHxSA)	---	---	< 1.8 U	< 1.8 U	< 1.9 U	---
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	---	---	< 1.8 U	< 1.8 U	< 1.9 U	< 2.98
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	---	---	< 1.8 U	< 1.8 U	< 1.9 U	< 5.96
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	---	---	< 1.8 U	< 1.8 U	< 1.9 U	< 5.96
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	---	---	< 1.8 U	< 1.8 U	< 1.9 U	< 5.96
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	---	---	< 1.8 U	< 1.8 U	< 1.9 U	< 5.96

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in nanograms per liter (ng/l; parts per trillion (ppt)).
3. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
4. PFAS SUM is the sum of the six perfluoroalkyl substances shown above (PFHpA, PFOA, PFNA, PFDA, PFHxS, and PFOS) and highlighted in light gray. ND indicates none of the six PFAS were detected above the laboratory reporting limits.
5. J indicates an estimated value; - indicates the sample was not analyzed for that particular compound.

TABLE 7
UNNAMED POND WEST SEDIMENT SAMPLE ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Sample Location	UP-101	UP-102	UP-103	UP-104
Sample Date	3/29/2023	3/29/2023	3/29/2023	3/29/2023
Analyte (ug/kg)				
Perfluoroheptanoic acid (PFHpA)	< 2.9	< 1.1	< 2.6	< 0.79
Perfluorooctanoic acid (PFOA)	< 2.9	**1.5**	< 2.6	< 0.79
Perfluorononanoic acid (PFNA)	< 2.9	**1.8**	< 2.6	**0.86**
Perfluorodecanoic acid (PFDA)	< 2.9	< 1.1	< 2.6	< 0.79
Perfluorohexanesulfonic acid (PFHxS)	< 2.9	**1.2**	< 2.6	**0.87**
Perfluorooctanesulfonic acid (PFOS)	**27**	**19**	**21**	**10**
Perfluorobutanoic Acid (PFBA)	< 2.9	< 1.1	< 2.6	< 0.79
Perfluoropentanoic Acid (PFPeA)	< 2.9	< 1.1	< 2.6	< 0.79
Perfluorohexanoic acid (PFHxA)	< 2.9	< 1.1	< 2.6	< 0.79
Perfluoroundecanoic Acid (PFUnA)	**5.5**	**1.1**	**2.9**	< 0.79
Perfluorododecanoic acid (PFDoDA)	< 2.9	< 1.1	< 2.6	< 0.79
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	< 2.9	< 1.1	< 2.6	< 0.79
Perfluorotetradecanoic acid (PFTeDA)	< 2.9	< 1.1	< 2.6	< 0.79
Perfluorobutanesulfonic acid (PFBS)	< 2.9	< 1.1	< 2.6	< 0.79
Perfluoropentanesulfonic Acid (PFPeS)	< 2.9	< 1.1	< 2.6	< 0.79
Perfluoroheptanesulfonic acid (PFHpS)	< 2.9	< 1.1	< 2.6	< 0.79
Perfluorononanesulfonic Acid (PFNS)	< 2.9	< 1.1	< 2.6	< 0.79
Perfluorodecanesulfonic acid (PFDS)	< 2.9	< 1.1	< 2.6	< 0.79
Perfluorooctane Sulfonamide (PFOSA)	< 2.9	< 1.1	< 2.6	< 0.79
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	< 2.9	< 1.1	< 2.6	< 0.79
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	< 2.9	< 1.1	< 2.6	< 0.79
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	< 2.9	< 1.1	< 2.6	< 0.79
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	< 2.9	< 1.1	< 2.6	< 0.79
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	< 2.9	< 1.1	< 2.6	< 0.79
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	< 2.9	< 1.1	< 2.6	< 0.79
Perfluoro-3-methoxypropanoic acid (PFMPA)	< 2.9	< 1.1	< 2.6	< 0.79
Perfluoro-4-methoxybutanoic acid (PFMBA)	< 2.9	< 1.1	< 2.6	< 0.79
Perfluoro-1-butanesulfonamide (FBSA)	< 2.9	< 1.1	< 2.6	< 0.79
Perfluoro-1-hexanesulfonamide (FHxSA)	< 2.9	< 1.1	< 2.6	< 0.79
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	< 2.9	< 1.1	< 2.6	< 0.79
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	< 2.9	< 1.1	< 2.6	< 0.79
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	< 2.9	< 1.1	< 2.6	< 0.79
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	< 2.9	< 1.1	< 2.6	< 0.79
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	< 2.9	< 1.1	< 2.6	< 0.79

Notes:
1. Samples were collected by GZA personnel in June 2024 and onward. Samples prior to June 2024 were collected by prior consultants.
2. Concentrations are reported in micrograms per kilogram (ug/kg; parts per billion (ppb)).
3. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
4. J indicates an estimated value; - indicates the sample was not analyzed for that particular compound.

TABLE 8

WATER LEVEL MEASUREMENTS COLLECTED IN JUNE 2024

Former Municipal Fire Training Facility

155 S Flint Rock Road

Hyannis, Massachusetts

Monitoring Well ID	General Screened Zone	Screened Interval (ft, bgs)	Measured Depth to Bottom (June 2024)	Measuring Point Elevation (NAVD88)	Depth to Groundwater (ft)	Groundwater Elevation (ft, NAVD88)
64-M1	deep	NA	58.80	NA	6.43	--
64-M2	deep	NA	59.00	NA	4.84	--
64-M3	deep	NA	59.50	NA	6.39	--
FS1-A	shallow	11-21	19.65	41.77	12.74	29.03
FS1-B	intermediate	27-32	31.00	41.84	12.71	29.13
FS1-C	Intermediate	45-50	48.30	41.92	12.62	29.30
HSW-1	shallow	3-13	20.32	40.01	10.59	29.42
HSW-6[2]	shallow	8-18	19.66	39.69	9.77	29.92
HW-1D[2]	deep	NA	46.39	29.66	4.72	24.94
HW-1S[2]	shallow	NA	12.98	29.61	4.71	24.90
HW-2D[2]	deep	NA	50.00	33.79	8.31	25.48
HW-2S[2]	shallow	NA	17.71	33.17	8.34	24.83
M2-89[6]	deep	55-65	70.02	42.98	18.12	24.86
M3-89[6,12]	shallow	NA	22.05	NA	18.77	--
M4-89	deep	55-60	66.58	NA	16.29	--
M5-90[12]	deep	45-55	55.95	NA	23.39	--
M9-90	deep	NA	77.84	NA	17.10	--
MW-1[2]	shallow	14-24	20.50	42.99	13.39	29.60
MW-1 - Airport Way	shallow	NA	25.00	NA	16.04	--
MW-2	shallow	14-24	24.35	42.72	13.72	29.00
MW-3D[2]	intermediate	36-41	39.46	42.90	14.03	28.87
MW-3I	intermediate	27-32	32.81	43.82	14.12	29.70
MW-3S[2]	shallow	14-24	23.46	42.68	13.91	28.77
MW-6[2]	shallow	14-24	19.82	41.11	12.48	28.63
MW-7	shallow	14-24	14.32	43.13	DRY	--
MW-8	shallow	14-24	17.43	48.72	14.56	34.16
MW-8C	shallow	NA	18.49	43.99	15.16	28.83
MW-9D[2]	intermediate	36-41	42.57	44.54	15.98	28.56
MW-9S[2]	shallow	14-24	20.20	44.06	15.20	28.86
MW-10	shallow	14-24	24.32	44.21	15.12	29.09
MW-11	shallow	14-24	27.92	NA	14.24	--
MW-12D	intermediate	40-45	43.98	NA	14.55	--
MW-12I[2]	intermediate	28-33	29.71	42.81	14.48	28.33
MW-12[2]	shallow	15-25	20.45	43.39	14.94	28.45
MW-13D	intermediate	27-37	37.39	NA	14.58	--
MW-13[2]	shallow	16-26	16.58	42.28	15.32	26.96
MW-15D[2]	intermediate	39-49	49.22	43.47	15.64	27.83
MW-15S[2]	shallow	13-23	17.71	43.05	15.20	27.85
MW-19 A	shallow	NA	21.21	44.06	15.85	28.21
MW-19B	deep	NA	55.19	44.15	15.95	28.20
MW-21	shallow	13-23	22.21	41.23	13.28	27.95
MW-22	shallow	14-24	20.41	43.46	15.11	28.35
MW-23[2]	shallow	14-24	19.49	42.50	14.54	27.96
MW-27	shallow	14-24	15.15	41.91	13.51	28.40
MW-28D[2]	intermediate	34-44	43.46	40.45	11.72	28.73
MW-28S[2]	shallow	12-22	18.90	40.70	12.00	28.70
MW-32	shallow	14-24	19.98	41.98	13.45	28.53
MW-33	shallow	15-25	17.05	52.61	16.79	35.82
MW-35D[2]	deep	NA	58.98	51.97	25.77	26.20
MW-35I[2]	intermediate	NA	49.09	51.38	25.98	25.40
MW-35S[2]	shallow	NA	39.00	52.27	26.78	25.49
MW-103[4]	shallow	10.5-20.5	21.35	40.16	11.36	28.80
MW-104	shallow	10-20	NM	NA	NM	--
MW-201[3]	shallow	10-20	19.50	37.91	9.04	28.87
MW-301[2]	shallow	5-15	14.70	38.71	9.71	29.00
MW-302[3]	shallow	5-15	14.90	37.85	8.86	28.99
MW-303[3]	shallow	5-15	14.90	36.56	7.84	28.72
MW-304[2]	shallow	5-15	14.50	34.85	5.92	28.93
MW-305[2]	shallow	5-15	17.18	39.92	10.89	29.03
MW-306[3]	shallow	5-15	15.00	36.81	7.51	29.30
MW-307D[1]	intermediate	35-40	42.98	41.30	11.18	30.12
MW-307S[1]	shallow	10-20	22.39	41.48	11.25	30.23
MW-308D[1]	intermediate	35-40	47.00	40.46	10.53	29.93
MW-308S[1]	shallow	10-20	22.52	40.19	10.24	29.95
MW-309[1]	intermediate	30-35	38.80	37.66	7.83	29.83
MW-310[2]	shallow	5-15	17.54	37.75	8.64	29.11
MW-311	shallow	6-16	17.29	38.84	9.86	28.98
MW-401D[2]	deep	45-50	50.48	39.65	14.61	25.04
MW-401S[2]	shallow	14-24	24.26	39.72	14.64	25.08
MW-402D[2]	deep	45-50	57.86	58.75	29.81	28.94
MW-402S[2]	shallow	29.5-39.5	39.46	58.63	29.69	28.94
MW-403D[2, 10]	deep	43-48	49.92	46.73	19.51	27.22
MW-403S[2]	shallow	18.5-28.5	28.67	46.86	19.33	27.53
MW-404D[3]	deep	45-50	52.59	53.79	29.08	24.71
MW-404S[3]	shallow	29.5-39.5	40.98	53.78	29.09	24.69
MW-405[3]	intermediate	45-50	47.21	37.78	8.78	29.00
MW-406[3]	intermediate	40-45	43.86	37.63	10.05	27.58
MW-407D	deep	38-43	43.70	NA	17.64	--
MW-407S	shallow	16-26	26.00	NA	17.53	--
MW-408D	deep	45-50	48.69	NA	26.23	--
MW-408S	shallow	24-34	33.01	NA	26.21	--
MW 84-3[1]	shallow	10-20	22.94	43.97	10.35	33.62
MW-99I	intermediate	36-46	NM	49.98	NM	--
OW-2D[3]	intermediate	35-45	44.88	37.26	8.18	29.08
OW-2S[3]	shallow	NA	20.45	37.91	8.83	29.08
OW-8A[2]	shallow	15-25	22.67	42.33	13.42	28.91
OW-8S	shallow	NA	22.74	NA	13.51	--

TABLE 8
WATER LEVEL MEASUREMENTS COLLECTED IN JUNE 2024
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Monitoring Well ID	General Screened Zone	Screened Interval (ft, bgs)	Measured Depth to Bottom (June 2024)	Measuring Point Elevation (NAVD88)	Depth to Groundwater (ft)	Groundwater Elevation (ft, NAVD88)
OW-8D[2]	intermediate	NA	37.71	42.60	13.71	28.89
OW-8I	shallow	NA	21.59	42.58	13.40	29.18
PC-0	shallow	NA	38.85	58.28	30.36	27.92
PC-1[2]	intermediate	35-45	37.50	54.97	27.00	27.97
PC-2[2]	shallow	25-35	34.90	51.63	23.35	28.28
PC-3	shallow	25-35	33.96	52.05	23.55	28.50
PC-6A[2]	shallow	35-45	37.13	58.84	31.78	27.06
PC-7	shallow	35-45	NM	57.61	NM	--
PC-8	shallow	35-45	44.76	56.88	29.88	27.00
PC-9	intermediate	30-40	NM	43.28	NM	--
PC-10[8]	deep	35-45	44.51	51.10	25.32	25.78
PC-11[2]	intermediate	35-45	44.07	55.42	27.88	27.54
PC-12	intermediate	35-45	44.86	54.68	26.82	27.86
PC-13	shallow	22-32	31.35	49.39	20.92	28.47
PC-14	intermediate	32-42	41.44	48.02	22.51	25.51
PC-15[2,8]	intermediate	30-40	NM	51.01	NM	--
PC-16D[2]	deep	40-50	48.60	56.37	29.74	26.63
PC-16S[2]	shallow	25-35	34.94	56.19	29.55	26.64
PC-17	deep	40-50	48.98	55.62	28.70	26.92
PC-18	deep	40-50	49.05	55.34	28.86	26.48
PC-19[2]	intermediate	30-45	44.20	55.59	27.76	27.83
PC-20D[7]	shallow	30-40	44.96	NA	30.44	--
PC-20S[7]	shallow	30-35	35.02	NA	30.45	--
PC-21D	deep	40-45	49.55	54.80	28.75	26.05
PC-21S	shallow	30-35	32.94	54.80	28.81	25.99
PC-22[2]	deep	35-45	44.81	48.83	23.58	25.25
PC-23D	intermediate	20-30	34.85	42.43	15.22	27.21
PC-23S	shallow	15-20	20.38	41.28	15.21	26.07
PC-24	deep	35-45	44.75	50.02	22.51	27.51
PC-25	intermediate	25-35	39.48	NA	15.82	--
PC-26	intermediate	40-50	49.43	58.34	30.40	27.94
PC-28[2]	intermediate	30-40	40.02	41.03	15.31	25.72
PC-29	intermediate	24-34	36.40	42.17	16.19	25.98
PC-30[2]	deep	40-50	49.25	57.22	30.59	26.63
PC-31[2]	shallow	30-45	49.04	59.31	32.25	27.06
PC-32	deep	38-48	NM	56.90	NM	--
PC-33[2]	deep	38-48	45.48	53.05	28.71	24.34
PC-34D[2]	intermediate	18.5-28.5	28.51	37.18	8.89	28.29
PC-34S[2]	shallow	10-15	15.04	37.88	8.13	29.75
PC-35D[2]	intermediate	18-28	27.89	37.66	8.65	29.01
PC-35S[2]	shallow	10-15	15.00	37.36	8.26	29.10
PC-36D[2]	intermediate	26-36	36.08	45.92	17.01	28.91
PC-36S[2]	shallow	14-24	24.03	45.92	16.94	28.98
PC-37[2,11]	shallow	NA	15.31	33.78	4.28	29.50
PC-38[2]	shallow	NA	46.46	58.08	31.02	27.06
PC-39[2]	intermediate	NA	40.21	55.65	26.84	28.81
PC-39D[2]	deep	46-51	51.20	55.09	26.42	28.67
PFW-1[2]	shallow	9-19	20.30	41.52	12.71	28.81
PFW-2	shallow	10-20	20.30	40.02	10.69	29.33
PFW-3[2]	shallow	10-20	20.09	37.54	8.43	29.11
PFW-4	shallow	10-20	21.54	39.34	9.98	29.36
PFW-5[2]	shallow	9-19	22.48	41.54	13.02	28.52
PFW-6	shallow	9-19	Destroyed	40.58	NM	--
TW3-08[1]	deep	60-65	NM	43.83	NM	--
TW4-08[1]	deep	65-70	64.97	49.35	18.83	30.52
TW5-08[1]	deep	65-70	65.00	58.19	27.85	30.34
TW6-08[1,9]	deep	65-70	65.00	36.09	6.36	29.73
TW7-08[1]	deep	65-70	58.74	38.39	7.56	30.83
TW64-0[12]	deep	NA	64.01	NA	2.35	--
TW86-5[1]	shallow	NA	22.30	43.32	13.08	30.24
VDT-01	shallow	7-17	19.87	NA	7.25	--
VDT-02D[4]	intermediate	38.5-48.5	51.45	36.51	8.16	28.35
VDT-02S[4]	shallow	7-17	19.90	37.21	8.30	28.91
VDT-03	shallow	8-23	25.13	NA	12.26	--
VDT-04D	intermediate	40-50	53.40	NA	19.41	--
VDT-04S	shallow	15-25	27.60	NA	19.59	--
VDT-05[4]	shallow	33-43	43.50	61.64	35.24	26.40
WS-101[1]	shallow	NA	13.30	36.03	6.01	30.02
UN-1[4]	shallow	NA	17.95	45.09	16.55	28.54
UN-2	intermediate	NA	33.40	NA	15.46	--
UN-3	intermediate	NA	42.41	NA	30.43	--
UN-4[4]	shallow	NA	36.60	52.94	28.31	24.63
UN-5	shallow	NA	27.94	NA	18.41	--
UN-6D	deep	NA	52.00	NA	21.06	--
UN-6S	shallow	NA	27.20	NA	20.48	--

TABLE 8
WATER LEVEL MEASUREMENTS COLLECTED IN JUNE 2024
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

NOTES:

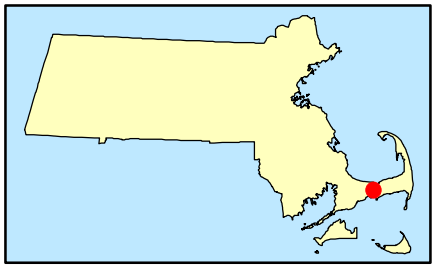
1. Measuring point elevations from April 2023 Green Seal Environmental Survey.
2. Measuring point elevations from November 2023 Green Seal Environmental Survey.
3. Measuring point elevations were sourced from BETA level surveys using existing known elevations or Leica Zeno 20 handheld GPS Unit.
4. Measuring point elevations were sourced from GZA using a TREMBLE R2 GPS unit on 6/20/2024. Horizontal accuracy was 0.42 ft or less.
5. All other measuring point elevations were provided to GZA by BETA in an electronic deliverable in May 2024.
6. A monitoring well identified as M3-89 was surveyed by Green Seal Environmental, LLC. Based on historic plans provided to GZA by Barnstable Fire District (BFD), this well location corresponds to another well designated M2-89. GZA observed a second monitoring well located to the northeast that appears to correspond to well M3-89 based on the plans provided by BFD. The monitoring wells have been renamed accordingly. The measuring point elevation associated with M3-89 is now assigned to M2-89.
7. The coordinates provided to GZA by BETA for monitoring well PC-20, appear to be inconsistent with available historic plans generated prior to 2020. Based on historic plans prior to 2020, GZA inferred that a well couplet located to the north of the provided coordinates with total well depths generally corresponding to the boring logs for PC-20S and PC-20D was likely the actual locations of the wells. Thus, the BETA's measuring point elevations for PC-20 are not GZA did observe a singular well at the approximate coordinates provided by BETA for PC-20. This well has been re-labeled as UN-3.
8. The coordinates provided in the November 2023 Green Seal Environmental, LLC survey for monitoring well PC-15 are approximately the same coordinates provided by BETA Group Inc. for monitoring well PC-10. Due to this coordinate error, PC-15 was not located in the field by GZA in June 2024. It is unclear whether PC-10 or PC-15 was surveyed. The measuring point elevations provided to GZA by BETA are included on this table as provided.
9. BETA provided GZA with coordinates for a monitoring well identified as TW08-9. Based on historic plans provided to GZA by the Barnstable Fire District, the coordinates are consistent with the actual location of well TW6-08. The well has been renamed accordingly in this table.
10. There appears to have been an error in the Green Seal survey data for MW-403S and MW-403D. The reference elevations for MW-403S and MW-403D (both flush mounted) were different by 5 feet. The measuring point elevation of MW-403D was changed to be consistent with BETA's February 2024 Intermin Phase II CSA Report which is different from the Green Seal Survey.
11. BETA indicated in prior tables that the August 2023 depth to water measurement is a recording error and should be discounted.
12. Select well locations in the Barnstable Fire District (BFD) property, which were not on historic plans for this RTN, were identified for GZA by BFD on June 19-20, 2024. The gauging data for these wells for these well locations for June 2024 was collected on June 19-20, 2024.
13. "UN" = unnamed well. GZA encountered additional monitoring wells in the field that were not identified on historic plans. These wells have been named UN-1 through UN-6S/D.
14. NA = Not available. Screened interval is not available as boring logs could not be located, or measuring point elevation is not available as the point has not been surveyed.
15. NM = Not Measured. Depth to groundwater or depth to bottom not measured. MW-104 was bent by a snowplow and is not accessible. The covers for PC-32 and TW3-08 are rusted and could not be opened. PC-9 and MW-99I could not be located. PC-7 was inhabited by mice.

TABLE 9
UNNAMED POND EAST AND UPPER GATE POND
SURFACE WATER ANALYTICAL RESULTS
Former Municipal Fire Training Facility
155 S Flint Rock Road
Hyannis, Massachusetts

Location	Unnamed Pond East	Upper Gate Pond
Sample Name	**UNPE-SW-GZA**	**UGP-SW-GZA**
Sample Date	6/20/2024	6/20/2024
Analyte		
Perfluoroheptanoic Acid (PFHpA)	**0.770 J**	**1.76 J**
Perfluorooctanoic Acid (PFOA)	**1.01 J**	< 8.00 U
Perfluorononanoic Acid (PFNA)	**0.541 J**	< 8.00
Perfluorodecanoic Acid (PFDA)	< 1.52	< 8.00
Perfluorohexanesulfonic Acid (PFHxS)	**1.67**	**5.00 J**
Perfluorooctanesulfonic Acid (PFOS)	**5.60**	**17.0**
PFAS6 SUM	**9.59**	**23.8**
Perfluorobutanoic Acid (PFBA)	**3.06 J**	**6.96 J**
Perfluoropentanoic Acid (PFPeA)	**1.34 J**	**4.68 J**
Perfluorohexanoic acid (PFHxA)	**0.892 J**	**3.32 J**
Perfluoroundecanoic Acid (PFUnA)	< 1.52	< 8.00
Perfluorododecanoic acid (PFDoDA)	< 1.52	< 8.00
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	< 1.52	< 8.00
Perfluorotetradecanoic acid (PFTeDA)	< 1.52	< 8.00
Perfluorobutanesulfonic acid (PFBS)	< 1.52	< 8.00
Perfluoropentanesulfonic Acid (PFPeS)	< 1.52	< 8.00
Perfluoroheptanesulfonic acid (PFHpS)	< 1.52	< 8.00
Perfluorononanesulfonic Acid (PFNS)	< 1.52	< 8.00
Perfluorodecanesulfonic acid (PFDS)	< 1.52	< 8.00
Perfluorooctane Sulfonamide (PFOSA)	< 1.52	< 8.00
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	< 1.52	< 8.00
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	< 1.52	< 8.00
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol (NMeFOSE)	< 15.2	< 80.0
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol (NEtFOSE)	< 15.2	< 80.0
N-ethyl perfluoro-1-octanesulfonamide (EtFOSA)	< 1.52	< 8.00
N-methyl perfluoro-1-octanesulfonamide (MeFOSA)	< 1.52	< 8.00
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2 FTS)	< 6.10	< 32.0
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2 FTS)	< 6.10	< 32.0
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2 FTS)	< 6.10	< 32.0
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	< 3.05	< 16.0
Perfluoro-3-methoxypropanoic acid (PFMPA)	< 3.05	< 16.0
Perfluoro-4-methoxybutanoic acid (PFMBA)	< 3.05	< 16.0
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	< 3.05	< 16.0
Hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	< 6.10	< 32.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	< 6.10	< 32.0
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9Cl-PF3ONS)	< 6.10	< 32.0
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	< 6.10	< 32.0

Notes:
1. Samples were collected by GZA personnel in June 2024
2. Concentrations are reported in nanograms per liter (ng/L; parts per trillion (ppt)).
3. Bolded values indicate the analyte was detected above the laboratory detection limit; " < " indicates the analyte was not detected above the laboratory reporting limit shown to the right.
4. J indicates an estimated value; -- indicates the sample was not analyzed for that particular compound.

Figures



SOURCE : USGS TOPOGRAPHIC QUADRANGLES SCANNED BY THE NATIONAL GEOGRAPHIC SOCIETY & I-CUBED, COPYRIGHT 2011

Data Supplied by : esri

0 1,000 2,000 4,000 6,000

SCALE IN FEET

N

W E

S

PROJ. MGR.: JEM
DESIGNED BY: KIC
REVIEWED BY: JEM
OPERATOR: JEM

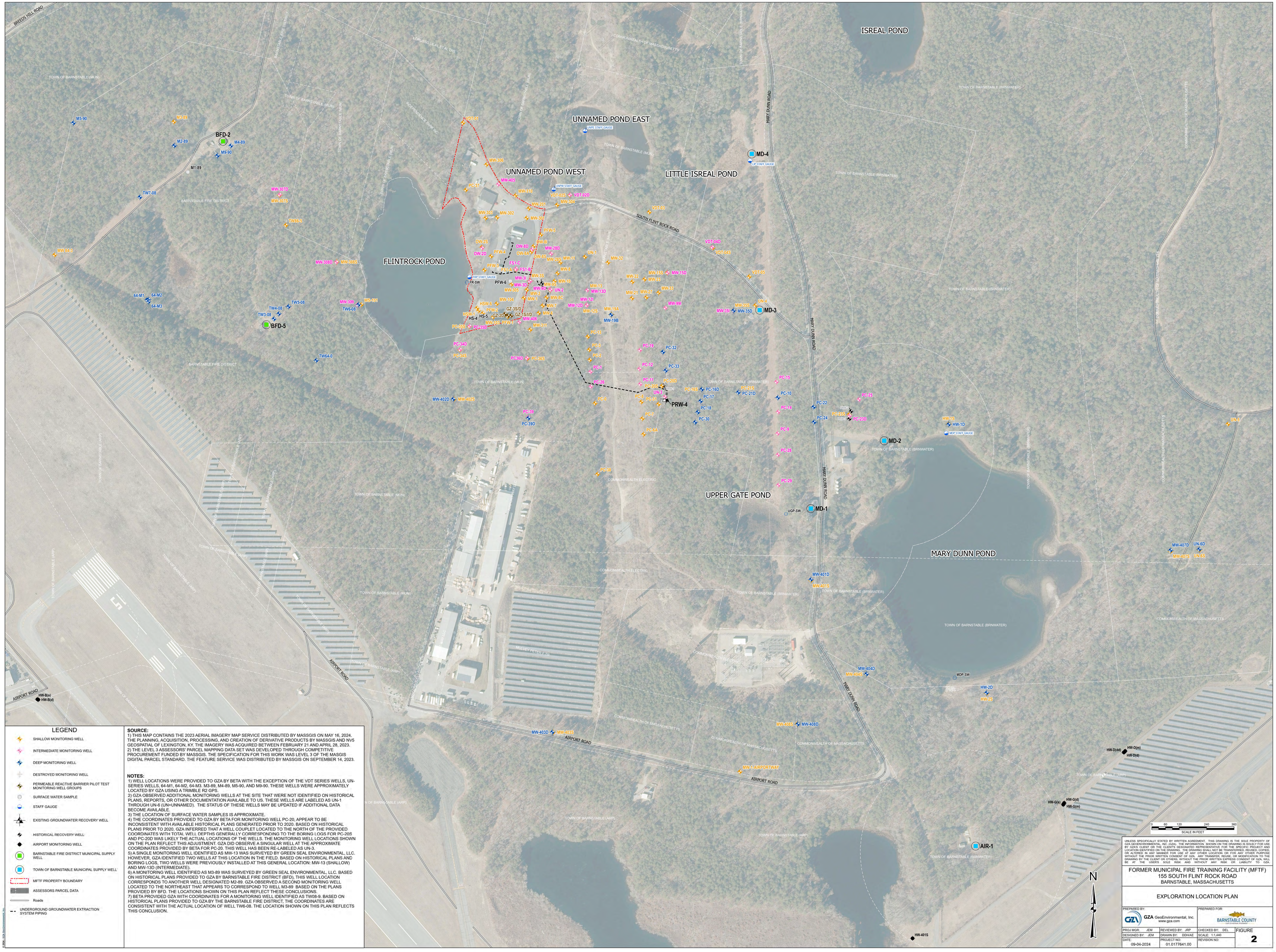
DATE: 08-08-2024

SITE LOCUS
SHOWING 500 FOOT & 1/2 MILE OFFSETS

JOB NO. 01.0177641.00

PHASE II INTERIM STATUS REPORT
155 S FLINT ROCK ROAD
HYANNIS, MASSACHUSETTS

FIGURE NO. 1



LEGEND

- SHALLOW MONITORING WELL
- INTERMEDIATE MONITORING WELL
- DEEP MONITORING WELL
- DESTROYED MONITORING WELL
- PERMEABLE REACTIVE BARRIER PILOT TEST MONITORING WELL GROUPS
- SURFACE WATER SAMPLE
- STAFF GAUGE
- EXISTING GROUNDWATER RECOVERY WELL
- HISTORICAL RECOVERY WELL
- AIRPORT MONITORING WELL
- BARNSTABLE FIRE DISTRICT MUNICIPAL SUPPLY WELL
- TOWN OF BARNSTABLE MUNICIPAL SUPPLY WELL
- MFTF PROPERTY BOUNDARY
- ASSESSORS PARCEL DATA
- Roads
- UNDERGROUND GROUNDWATER EXTRACTION SYSTEM PIPING

SOURCE:
1) THIS MAP CONTAINS THE 2023 AERIAL IMAGERY MAP SERVICE DISTRIBUTED BY MASSGIS ON MAY 16, 2024. THE PLANNING, ACQUISITION, PROCESSING, AND CREATION OF DERIVATIVE PRODUCTS BY MASSGIS AND NV5 GEOSPATIAL OF LEXINGTON, KY. THE IMAGERY WAS ACQUIRED BETWEEN FEBRUARY 21 AND APRIL 26, 2023.
2) THE LEVEL 3 ASSESSORS' PARCEL MAPPING DATA SET WAS DEVELOPED THROUGH COMPETITIVE PROCUREMENT FUNDED BY MASSGIS. THE SPECIFICATION FOR THIS WORK WAS LEVEL 3 OF THE MASGIS DIGITAL PARCEL STANDARD. THE FEATURE SERVICE WAS DISTRIBUTED BY MASSGIS ON SEPTEMBER 14, 2023.

NOTES:
1) WELL LOCATIONS WERE PROVIDED TO GZA BY BETA WITH THE EXCEPTION OF THE VDT SERIES WELLS, UN-SERIES WELLS, 64-M1, 64-M2, 64-M3. M3-89, M4-89, M5-90, AND M9-90. THESE WELLS WERE APPROXIMATELY LOCATED BY GZA USING A TRIMBLE R2 GPS.
2) GZA OBSERVED ADDITIONAL MONITORING WELLS AT THE SITE THAT WERE NOT IDENTIFIED ON HISTORICAL PLANS, REPORTS, OR OTHER DOCUMENTATION AVAILABLE TO US. THESE WELLS ARE LABELED AS UN-1 THROUGH UN-6 (UN=UNNAMED). THE STATUS OF THESE WELLS MAY BE UPDATED IF ADDITIONAL DATA BECOME AVAILABLE.
3) THE LOCATION OF SURFACE WATER SAMPLES IS APPROXIMATE.
4) THE COORDINATES PROVIDED TO GZA BY BETA FOR MONITORING WELL PC-20, APPEAR TO BE INCONSISTENT WITH AVAILABLE HISTORICAL PLANS GENERATED PRIOR TO 2020. BASED ON HISTORICAL PLANS PRIOR TO 2020, GZA INFERRED THAT A WELL COUPLET LOCATED TO THE NORTH OF THE PROVIDED COORDINATES WITH TOTAL WELL DEPTHS GENERALLY CORRESPONDING TO THE BORING LOGS FOR PC-20S AND PC-20D WAS LIKELY THE ACTUAL LOCATIONS OF THE WELLS. THE MONITORING WELL LOCATIONS SHOWN ON THE PLAN REFLECT THIS ADJUSTMENT. GZA DID OBSERVE A SINGULAR WELL AT THE APPROXIMATE COORDINATES PROVIDED BY BETA FOR PC-20. THIS WELL HAS BEEN RE-LABELED AS UN-3.
5) A SINGLE MONITORING WELL IDENTIFIED AS MW-13 WAS SURVEYED BY GREEN SEAL ENVIRONMENTAL, LLC. HOWEVER, GZA IDENTIFIED TWO WELLS AT THIS LOCATION IN THE FIELD. BASED ON HISTORICAL PLANS AND BORING LOGS, TWO WELLS WERE PREVIOUSLY INSTALLED AT THIS GENERAL LOCATION: MW-13 (SHALLOW) AND MW-13D (INTERMEDIATE).
6) A MONITORING WELL IDENTIFIED AS M3-89 WAS SURVEYED BY GREEN SEAL ENVIRONMENTAL, LLC. BASED ON HISTORICAL PLANS PROVIDED TO GZA BY BARNSTABLE FIRE DISTRICT (BFD), THIS WELL LOCATION CORRESPONDS TO ANOTHER WELL DESIGNATED M2-89. GZA OBSERVED A SECOND MONITORING WELL LOCATED TO THE NORTHEAST THAT APPEARS TO CORRESPOND TO WELL M3-89. BASED ON THE PLANS PROVIDED BY BFD. THE LOCATIONS SHOWN ON THIS PLAN REFLECT THESE CONCLUSIONS.
7) BETA PROVIDED GZA WITH COORDINATES FOR A MONITORING WELL IDENTIFIED AS TW08-9. BASED ON HISTORICAL PLANS PROVIDED TO GZA BY THE BARNSTABLE FIRE DISTRICT, THE COORDINATES ARE CONSISTENT WITH THE ACTUAL LOCATION OF WELL TW6-08. THE LOCATION SHOWN ON THIS PLAN REFLECTS THIS CONCLUSION.

FORMER MUNICIPAL FIRE TRAINING FACILITY (MFTF)
155 SOUTH FLINT ROCK ROAD
BARNSTABLE, MASSACHUSETTS

EXPLORATION LOCATION PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. www.gza.com		PREPARED FOR: BARNSTABLE COUNTY	
PROJ MGR: JEM	REVIEWED BY: JRP	CHECKED BY: DEL	FIGURE 2
DESIGNED BY: JEM	DRAWN BY: DDH/AE	SCALE: 1:1,440	
DATE: 09-04-2024	PROJECT NO: 01.0177641.00	REVISION NO:	

LORUSSO LILA L ET AL TRS

TOWN OF BARNSTABLE (MUN)

INDEPENDENCE PARK INC

SUPPLY BUILDING

UNNAMED POND WEST

ADMINISTRATIVE/EQUIPMENT STORAGE BUILDING

SOUTH FLINT ROCK ROAD

SEPTIC SYSTEM

QUONSET HUTS

GWTS RECHARGE BASINS

FLINTROCK POND

FORCE MAIN

GWTS #1

GWTS #2

STORAGE SHED

FORMER BURN BUILDING

FORMER HOT SPOT AREA

TRANSECT A

TRANSECT B

TRANSECT C

TRANSECT D

TRANSECT E

TRANSECT F

BARNSTABLE FIRE DISTRICT

UNPW STAFF GAUGE

VDT-01	4.50 / NS / NS
MW-306	0.32 / NS / < 0.27
SS-201	0.60 / NS / NS
SS-202	0.71 / NS / NS
MW-405	NS / < 0.23 / < 0.23
MW-310	4.50 / NS / <0.46
UP-103 | 21.0	
UP-104 | 10.0	
UP-102 | 19.0	
UP-101 | 27.0	
SB-201	26.0 / 0.89 / NS
MW-303	2.60 / NS / < 0.27
MW-304	11.0 / NS / <0.49
SED-8A | 180	
SED-8B | 4.00	
FRP-101 | 92.0	
MW-302	1.90 / NS / 2.40
SB-203	1.70 / NS / NS
MW-301	<0.27 / NS / < 0.27
SB-202	170 / NS / NS
SS-122	28.0 / <0.43 / <0.43
VDT-02	0.98 / 0.26 / NS
SS-203	2.30 / NS / NS
FRP-102 | 36.0	
SB-FRP 0-1' | 26.0	
POND-2S | 11.0	
SB-FRP 1-2' | 18.0	
FRP-103 | 4.10	
POND-2D | 34.0	
SS-204	13.0 / NS / NS
TP-01	360 / NS / 8.60
SS-123	
SS-124	
SS-213	2.00 / NS / NS
SS-121	8.70 / NS / NS
POND-3 | 8.70	
SED-7B | 130	
SED-7A | 2.70	
FRP-104 | 25.0	
B-11	
SS-117	42.0 / NS / NS
SS-118	33.0 / 6.10 / <0.43
SS-119	
SS-212	2.40 / NS / NS
B-09	820 / 14.0 / 0.30
FRP-105 | 95.0	
TP-04	NS / 17.0 / 14.0
SB-206	56.0 / 8.00 / NS
B-05	NS / 350 / 35.0
SB-205	34.0 / NS / NS
TP-02	3.10 / NS / 15.0
SS-120	3.50 / NS / NS
SS-214	1.60 / NS / NS
SB-207	17.0 / NS / NS
SB-208	97.0 / NS / NS
TP-03	NS / 1.10 / 1.10
POND-NORTH | 1000	
FRP-106 | 140	
PIEZ-1	
B-10	20.0 / 93.0 / 3.00
B-06	NS / 11.0 / 17.0
SS-113	180 / NS / NS
B-08	NS / NS / 4.60
SS-114	79.0 / <0.45 / <0.45
SS-115	13.0 / NS / NS
SS-116	<0.54 / NS / NS
FRP-107 | BRL (<54)	
SED-301 | 150	
SED-201 | 67.0	
SED-3 | 170	
POND-DELTA | 41.0	
SED-2 | 90.0	
SED-101 | 13.0	
SED-1 | 12.0	
B-07	120 / NS / 5.70
SB-209	4.50 / 0.99 / NS
SS-211	1.80 / NS / NS
FRP-108 | BRL (<27)	
SB-211	16.0 / NS / 110
TP-05	NS / 530 / 4.30
SB-210	41.0 / NS / NS
MW-305	33.0 / NS / 1.60
SS-109	180 / NS / NS
SS-110	90.0 / 11.0 / 0.70
FRP-109 | 270	
POND-SOUTH | 1100	
SB-212	1.50 / NS / NS
B-12	NS / 0.28 / 0.45
SED-X | 100	
POND 1S | 19.0	
SED-6 | 280	
FRP-115 | 200	
SED-501 | 72.0	
SED-5 | 120	
POND 1D | 23.0	
SED-4 | 49.0	
SED-401 | 78.0	
B-03	
B-02	NS / 100 / 290
SB-102	12.0 / NS / 37.0
SB-104	100 / 77.0 / 12.0
SB-213	1.90 / NS / 2.70
SB-214	43.0 / 20.0 / NS
SS-209	13.0 / NS / NS
FRP-122 | 240	
PIEZ-3	
FRP-121 | 390	
FRP-120 | 460	
FRP-110 | 100	
FRP-119 | 230	
FRP-118 | 370	
FRP-117 | 260	
FRP-116 | 110	
B-01	NS / 2.00 / 1.90
SS-210	<0.51 / NS / NS
HSW-6	NS / 500 / 330
HS-5	NS / 350 / 380
HS-4	NS / NS / 280
SS-112	6.90 / NS / NS
FRP-111 | 310	
SS-111	38.0 / NS / NS
FRP-112 | 240	
SB-101	NS / 21.0 / 40.0
SB-103	NS / NS / 13.0
SS-105	5.40 / NS / NS
MW-406	NS / 22.0 / 4.30
SS-101	9.40 / NS / NS
SS-102	24.0 / 4.10 / 3.20
SS-103	15.0 / NS / NS
SS-104	9.10 / NS / NS
SS-108	6.70 / NS / NS
SS-107	7.80 / NS / NS
SS-106	5.30 / 3.80 / <0.43
FRP-113 | 350	
FRP-114 | 26.0	
SS-205	1.20 / NS / NS
SS-206	<0.47 / NS / NS
SS-208	<0.5 / NS / NS
SS-207	0.96 / NS / NS

LEGEND

SAMPLE DEPTH KEY

0-3'
3-6'
6-15'

PFOS SAMPLE CONCENTRATION

- <2 ug/kg
- <2 ug/kg; OTHER PFAS COMPOUND WAS DETECTED ABOVE APPLICABLE MCP METHOD 1 S-1/GW-1 STANDARD OR THE LAB REPORTING LIMIT WAS ABOVE THE APPLICABLE STANDARD
- 2 - 20 ug/kg
- >20-100 ug/kg
- >100 ug/kg

NS = NOT SAMPLED

- SOIL BORING
- SOIL SAMPLE
- SEDIMENT SAMPLE
- TEST PIT
- SHALLOW MONITORING WELL
- INTERMEDIATE MONITORING WELL
- DEEP MONITORING WELL
- FLINTROCK POND BATHYMETRY CONTOURS
- MFTF PROPERTY BOUNDARY
- ASSESSORS PARCEL DATA
- EXCAVATION AREA 10FT DEPTH
- EXCAVATION AREA 5FT DEPTH

SOURCE:

1) THIS MAP CONTAINS THE 2023 AERIAL IMAGERY MAP SERVICE DISTRIBUTED BY MASSGIS ON MAY 16, 2024. THE PLANNING, ACQUISITION, PROCESSING, AND CREATION OF DERIVATIVE PRODUCTS BY MASSGIS AND NV5 GEOSPATIAL OF LEXINGTON, KY. THE IMAGERY WAS ACQUIRED BETWEEN FEBRUARY 21 AND APRIL 28, 2023.
2) THE LEVEL 3 ASSESSORS' PARCEL MAPPING DATA SET WAS DEVELOPED THROUGH COMPETITIVE PROCUREMENT FUNDED BY MASSGIS. THE SPECIFICATION FOR THIS WORK WAS LEVEL 3 OF THE MASGIS DIGITAL PARCEL STANDARD. THE FEATURE SERVICE WAS DISTRIBUTED BY MASSGIS ON SEPTEMBER 14, 2023.

NOTES:

1) SEDIMENT, SURFICIAL SOIL (SS SERIES), MW-300 SERIES, AND MW-400 SERIES SAMPLE LOCATIONS PROVIDED TO GZA BY BETA GROUP INC. (BETA)
2) VDT SERIES SAMPLE LOCATIONS WERE ESTIMATED BY GZA USING A TREMBLE R2 GPS UNIT.
3) SB-200 SERIES AND B SERIES SAMPLE LOCATIONS WERE OBTAINED FROM BETA'S PLAN ENTITLED "FIGURE 2: SITE PLAN DETAIL: FTA FACILITY" DATED 4/22/2021.
4) TP SERIES SAMPLE LOCATIONS WERE OBTAINED FROM BETA'S PLAN ENTITLED "FIGURE 2B: SITE PLAN DETAIL" DATED 10/16/2019.
5) SB-100 SERIES SAMPLE LOCATIONS WERE OBTAINED FROM BETA'S PLAN ENTITLED "FIGURE 2: SITE PLAN FTA FACILITY" DATED 6/23/2020.
6) FOR EACH SOIL SAMPLE DEPTH CATEGORY, IF MORE THAN ONE SAMPLE WAS COLLECTED AT A PARTICULAR LOCATION, THE HIGHEST DETECTED CONCENTRATION IS SHOWN. IF THE SOIL SAMPLE COLLECTED SPANNED MORE THAN ONE DEPTH CATEGORY, IT WAS PLACED INTO THE SHALLOWER DEPTH CATEGORY.
7) SEDIMENT SAMPLE LOCATIONS FRP-107 AND FRP-108 ARE COLORED ORANGE AS THEIR LABORATORY REPORTING LIMITS FELL WITHIN THE >20-100 UG/KG CATEGORY.
8) SOIL SAMPLING TRANSECT DESIGNATIONS WERE OBTAINED FROM BETA'S APRIL 2023 IMMEDIATE RESPONSE ACTION STATUS & REMEDIAL MONITORING REPORT NO. 64 & INTERIM PHASE II CSA STATUS REPORT, TABLES 11 AND 12.

0 15 30 60 90
SCALE IN FEET

FORMER MUNICIPAL FIRE TRAINING FACILITY (MFTF)
155 SOUTH FLINT ROCK ROAD
BARNSTABLE, MASSACHUSETTS

SOIL & SEDIMENT EXPLORATION LOCATION PLAN

PREPARED BY: GeoEnvironmental, Inc. www.gza.com

PREPARED FOR: BARNSTABLE COUNTY

PROJ MGR: JEM	REVIEWED BY: JRP	CHECKED BY: DEL	FIGURE 3
DESIGNED BY: JEM	DRAWN BY: DDH/AE	SCALE: 1:360	
DATE: 09-05-2024	PROJECT NO: 01.0177641.00	REVISION NO:	

PC-25
PRW-2
PC-23S
PRW-3
PC-23D
HW-1S
HW-1D
MDP STAFF GAUGE
MD-2
TOWN OF BARNSTABLE (BRNWATER)
COMMONWEALTH OF MASSACHUSETTS
MARY DUNN ROAD
MARY DUNN POND
MDP-116 | <0.51
MDP-115 | 6.9
MDP-114 | 4.4
MDP-113 | 20
MDP-112 | 1.5
MDP-111 | 6.1
MDP-110 | 12
MDP-109 | 12
MDP-108 | 9.9
MDP-107 | 15
MDP-106 | 20
MDP-105 | 20
MDP-104 | 11
MDP-103 | 7.7
MDP-102 | 1.8
MDP-101 | 16
GWS-14D
GWS-14S
MW-404D
MW-404S
GWS-15D
GWS-15S
HW-2D
HW-2S
GWS-24D
GWS-24S
GWS-24I
GWS-25D
GWS-25I
COMMONWEALTH ELECTRIC

LEGEND

SEDIMENT SAMPLE PFOS CONCENTRATION
- <2 ug/kg
- 2 - 20 ug/kg
- >20 - 100 ug/kg
- >100 ug/kg

GROUNDWATER GRAB SAMPLE COLLECTED BY BETA BETWEEN AUGUST 2022 AND APRIL 2023

STAFF GAUGE

HISTORICAL RECOVERY WELL

TOWN OF BARNSTABLE MUNICIPAL SUPPLY WELL

ASSESSORS PARCEL DATA

SHALLOW MONITORING WELL

INTERMEDIATE MONITORING WELL

DEEP MONITORING WELL

DESTROYED MONITORING WELL

MARY DUNN POND BATHYMETRY CONTOURS

ROADS

SOURCE:
1) THIS MAP CONTAINS THE 2023 AERIAL IMAGERY MAP SERVICE DISTRIBUTED BY MASSGIS ON MAY 16, 2024. THE PLANNING, ACQUISITION, PROCESSING, AND CREATION OF DERIVATIVE PRODUCTS BY MASSGIS AND NV5 GEOSPATIAL OF LEXINGTON, KY. THE IMAGERY WAS ACQUIRED BETWEEN FEBRUARY 21 AND APRIL 28, 2023.
2) THE LEVEL 3 ASSESSORS' PARCEL MAPPING DATA SET WAS DEVELOPED THROUGH COMPETITIVE PROCUREMENT FUNDED BY MASSGIS. THE SPECIFICATION FOR THIS WORK WAS LEVEL 3 OF THE MASGIS DIGITAL PARCEL STANDARD. THE FEATURE SERVICE WAS DISTRIBUTED BY MASSGIS ON SEPTEMBER 14, 2023.
3) THE MARY DUNN POND BATHYMETRY CONTOURS WERE OBTAINED FROM A PLAN ENTITLED 'SINGLE BEAM BATHYMETRIC SURVEY: MARY DUNN POND, BARNSTABLE, MA' DEVELOPED BY STEEL ASSOCIATES MARINE CONSULTANTS, LLC FOR BETA DATED 1/10/23.

NOTES:
1) PFOS = PERFLUOROOCTANESULFONIC ACID
2) SEDIMENT SAMPLES WERE COLLECTED IN JUNE 2023 BY BETA. SAMPLE LOCATIONS PROVIDED BY BETA.

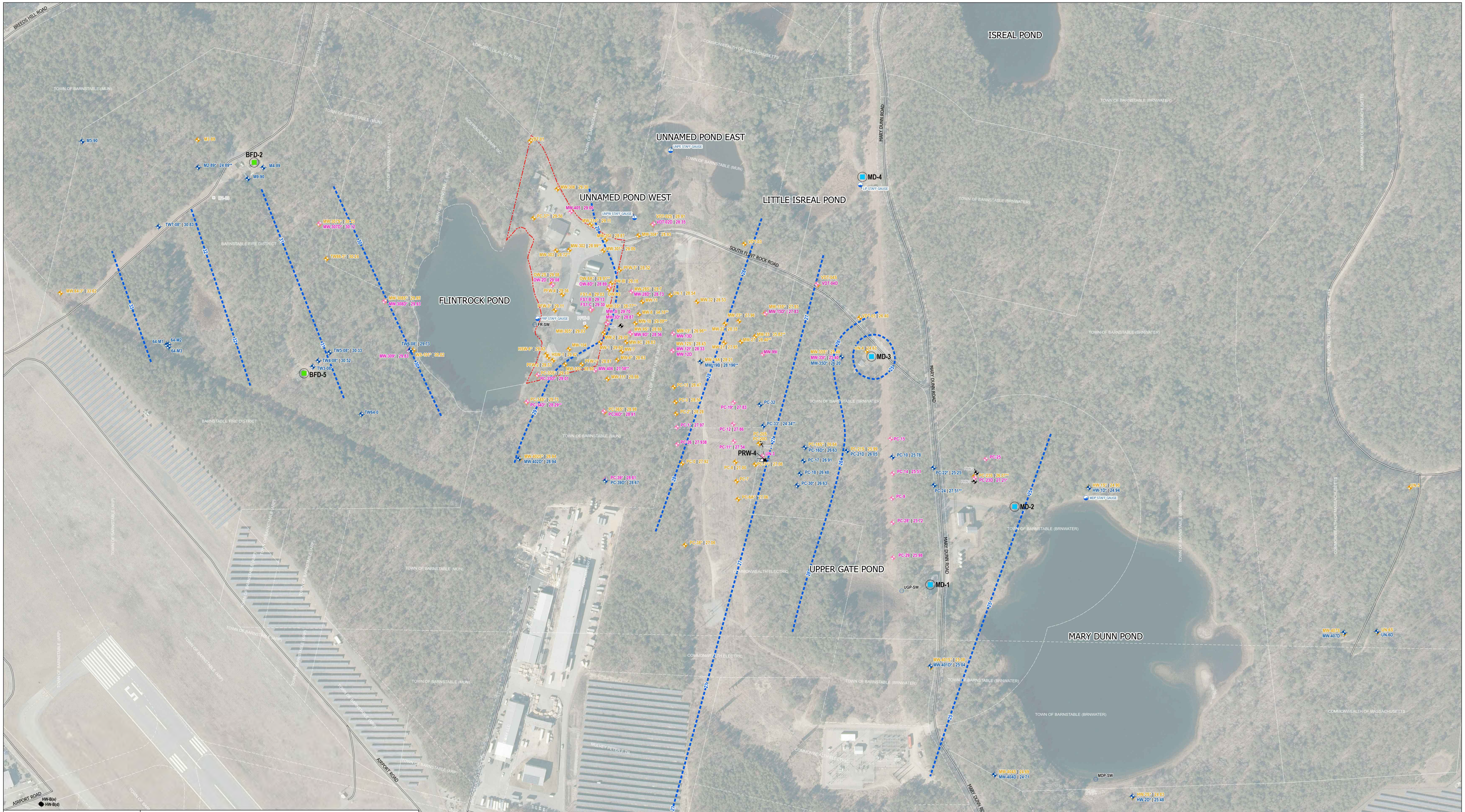
0 60 120 240
SCALE IN FEET

N

FORMER MUNICIPAL FIRE TRAINING FACILITY
155 SOUTH FLINT ROCK ROAD
BARNSTABLE, MASSACHUSETTS

MARY DUNN POND SEDIMENT EXPLORATION LOCATION PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. www.gza.com		PREPARED FOR: BARNSTABLE COUNTY	
PROJ MGR: JEM	REVIEWED BY: JRP	CHECKED BY: DEL	FIGURE 4
DESIGNED BY: JEM	DRAWN BY: DDH/AE	SCALE: 1:1,440	
DATE: 08-26-2024	PROJECT NO: 01.0177641.00	REVISION NO:	



LEGEND

- WELL NAME
- ELEVATION MAY NOT BE RELIABLE
- MW-403S* | 27.53** — JUNE 2024 GROUNDWATER ELEVATION
- INDICATES WELL SURVEYED BY GREEN SEAL ENVIRONMENTAL, LLC IN APRIL OR NOVEMBER 2023
- SHALLOW MONITORING WELL
- INTERMEDIATE MONITORING WELL
- DEEP MONITORING WELL
- DESTROYED MONITORING WELL
- SURFACE WATER SAMPLE
- STAFF GAUGE
- AIRPORT MONITORING WELL
- BARNSTABLE FIRE DISTRICT MUNICIPAL SUPPLY WELL
- TOWN OF BARNSTABLE MUNICIPAL SUPPLY WELL
- EXISTING GROUNDWATER RECOVERY WELL
- HISTORICAL RECOVERY WELL
- ROADS
- ASSESSORS PARCEL DATA
- MFTF PROPERTY BOUNDARY
- SHALLOW JUNE 2024 GROUNDWATER CONTOURS

SOURCE:

1) THIS MAP CONTAINS THE 2023 AERIAL IMAGERY MAP SERVICE DISTRIBUTED BY MASSGIS ON MAY 16, 2024. THE PLANNING, ACQUISITION, PROCESSING, AND CREATION OF DERIVATIVE PRODUCTS BY MASSGIS AND NV5 GEOSPATIAL OF LEXINGTON, KY. THE IMAGERY WAS ACQUIRED BETWEEN FEBRUARY 21 AND APRIL 28, 2023.
2) THE LEVEL 3 ASSESSORS' PARCEL MAPPING DATA SET WAS DEVELOPED THROUGH COMPETITIVE PROCUREMENT FUNDED BY MASSGIS. THE SPECIFICATION FOR THIS WORK WAS LEVEL 3 OF THE MASGIS DIGITAL PARCEL STANDARD. THE FEATURE SERVICE WAS DISTRIBUTED BY MASSGIS ON SEPTEMBER 14, 2023.

NOTES:

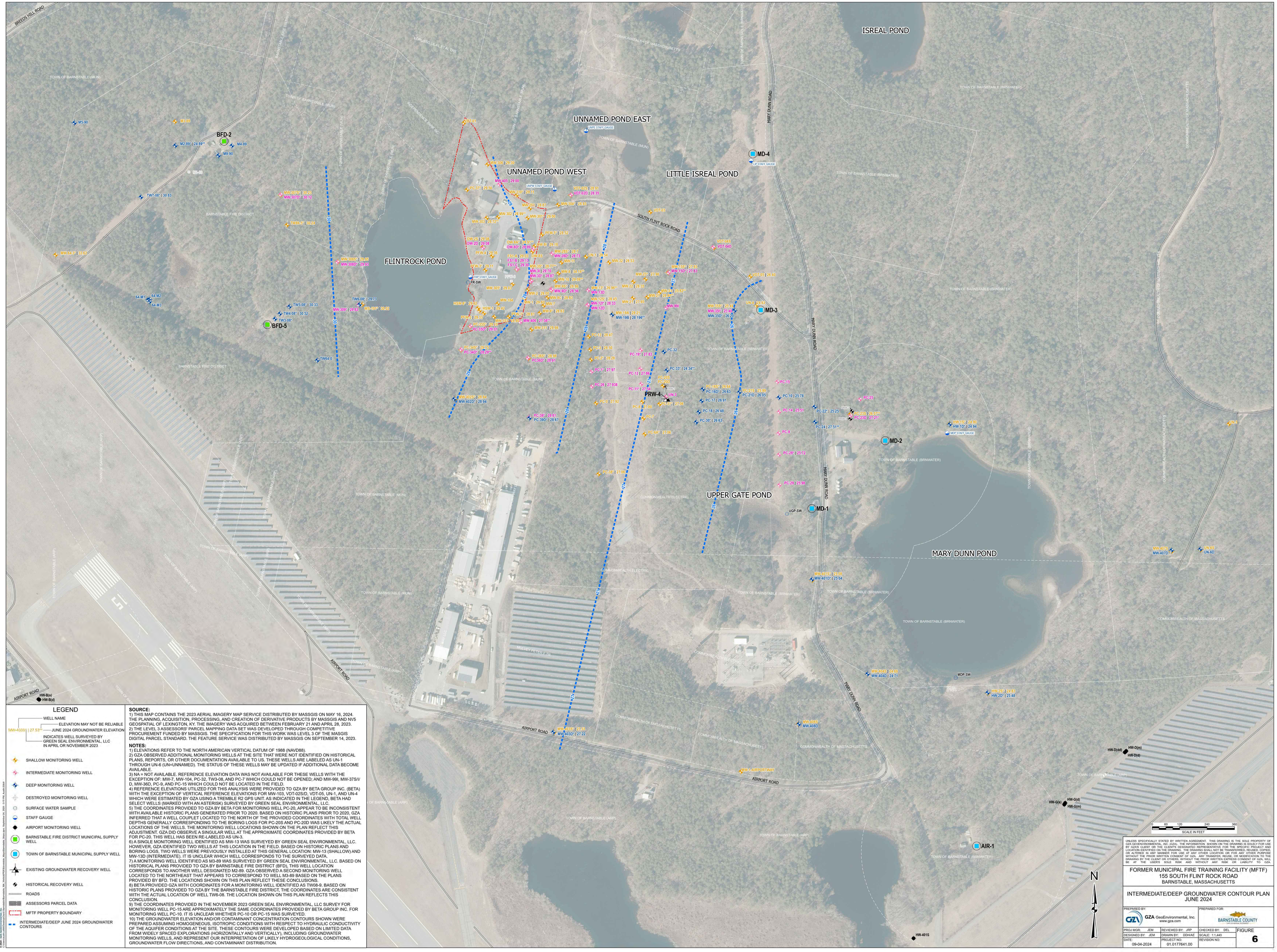
1) ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2) GZA OBSERVED ADDITIONAL MONITORING WELLS AT THE SITE THAT WERE NOT IDENTIFIED ON HISTORICAL PLANS, REPORTS, OR OTHER DOCUMENTATION AVAILABLE TO US. THESE WELLS ARE LABELED AS UN-1 THROUGH UN-6 (UN=UNNAMED). THE STATUS OF THESE WELLS MAY BE UPDATED IF ADDITIONAL DATA BECOME AVAILABLE.
3) NA = NOT AVAILABLE. REFERENCE ELEVATION DATA WAS NOT AVAILABLE FOR THESE WELLS WITH THE EXCEPTION OF: MW-7, MW-104, PC-32, TW3-08, AND PC-7 WHICH COULD NOT BE OPENED; AND MW-99I, MW-37S/I/D, MW-36D, PC-9, AND PC-15 WHICH COULD NOT BE LOCATED IN THE FIELD.
4) REFERENCE ELEVATIONS UTILIZED FOR THIS ANALYSIS WERE PROVIDED TO GZA BY BETA GROUP INC. (BETA) WITH THE EXCEPTION OF VERTICAL REFERENCE ELEVATIONS FOR MW-103, VDT-02S/D, VDT-05, UN-1, AND UN-4 WHICH WERE ESTIMATED BY GZA USING A TREMBLE R2 GPS UNIT. AS INDICATED IN THE LEGEND, BETA HAD SELECT WELLS (MARKED WITH AN ASTERISK) SURVEYED BY GREEN SEAL ENVIRONMENTAL, LLC.
5) THE COORDINATES PROVIDED TO GZA BY BETA FOR MONITORING WELL PC-20, APPEAR TO BE INCONSISTENT WITH AVAILABLE HISTORIC PLANS GENERATED PRIOR TO 2020. BASED ON HISTORIC PLANS PRIOR TO 2020, GZA INFERRED THAT A WELL COUPLET LOCATED TO THE NORTH OF THE PROVIDED COORDINATES WITH TOTAL WELL DEPTHS GENERALLY CORRESPONDING TO THE BORING LOGS FOR PC-20S AND PC-20D WAS LIKELY THE ACTUAL LOCATIONS OF THE WELLS. THE MONITORING WELL LOCATIONS SHOWN ON THE PLAN REFLECT THIS ADJUSTMENT. GZA DID OBSERVE A SINGULAR WELL AT THE APPROXIMATE COORDINATES PROVIDED BY BETA FOR PC-20. THIS WELL HAS BEEN RE-LABELED AS UN-3.
6) A SINGLE MONITORING WELL IDENTIFIED AS MW-13 WAS SURVEYED BY GREEN SEAL ENVIRONMENTAL, LLC. HOWEVER, GZA IDENTIFIED TWO WELLS AT THIS LOCATION IN THE FIELD. BASED ON HISTORIC PLANS AND BORING LOGS, TWO WELLS WERE PREVIOUSLY INSTALLED AT THIS GENERAL LOCATION: MW-13 (SHALLOW) AND MW-13D (INTERMEDIATE). IT IS UNCLEAR WHICH WELL CORRESPONDS TO THE SURVEYED DATA.
7) A MONITORING WELL IDENTIFIED AS M3-89 WAS SURVEYED BY GREEN SEAL ENVIRONMENTAL, LLC. BASED ON HISTORICAL PLANS PROVIDED TO GZA BY BARNSTABLE FIRE DISTRICT (BFD), THIS WELL LOCATION CORRESPONDS TO ANOTHER WELL DESIGNATED M2-89. GZA OBSERVED A SECOND MONITORING WELL LOCATED TO THE NORTHEAST THAT APPEARS TO CORRESPOND TO WELL M3-89 BASED ON THE PLANS PROVIDED BY BFD. THE LOCATIONS SHOWN ON THIS PLAN REFLECT THESE CONCLUSIONS.
8) BETA PROVIDED GZA WITH COORDINATES FOR A MONITORING WELL IDENTIFIED AS TW08-9. BASED ON HISTORIC PLANS PROVIDED TO GZA BY THE BARNSTABLE FIRE DISTRICT, THE COORDINATES ARE CONSISTENT WITH THE ACTUAL LOCATION OF WELL TW6-08. THE LOCATION SHOWN ON THIS PLAN REFLECTS THIS CONCLUSION.
9) THE COORDINATES PROVIDED IN THE NOVEMBER 2023 GREEN SEAL ENVIRONMENTAL, LLC SURVEY FOR MONITORING WELL PC-15 ARE APPROXIMATELY THE SAME COORDINATES PROVIDED BY BETA GROUP INC. FOR MONITORING WELL PC-10. IT IS UNCLEAR WHETHER PC-10 OR PC-15 WAS SURVEYED.
10) THE GROUNDWATER ELEVATION AND/OR CONTAMINANT CONCENTRATION CONTOURS SHOWN WERE PREPARED ASSUMING HOMOGENEOUS, ISOTROPIC CONDITIONS WITH RESPECT TO HYDRAULIC CONDUCTIVITY OF THE AQUIFER CONDITIONS AT THE SITE. THESE CONTOURS WERE DEVELOPED BASED ON LIMITED DATA FROM WIDELY SPACED EXPLORATIONS (HORIZONTALLY AND VERTICALLY), INCLUDING GROUNDWATER MONITORING WELLS, AND REPRESENT OUR INTERPRETATION OF LIKELY HYDROGEOLOGICAL CONDITIONS, GROUNDWATER FLOW DIRECTIONS, AND CONTAMINANT DISTRIBUTION.

0 60 120 240 360
SCALE IN FEET

FORMER MUNICIPAL FIRE TRAINING FACILITY (MFTF)
155 SOUTH FLINT ROCK ROAD
BARNSTABLE, MASSACHUSETTS

SHALLOW GROUNDWATER CONTOUR PLAN
JUNE 2024

PREPARED BY: GZA GeoEnvironmental, Inc. www.gza.com		PREPARED FOR: BARNSTABLE COUNTY CAPE COD REGIONAL GOVERNMENT	
PROJ MGR: JEM	REVIEWED BY: JRP	CHECKED BY: DEL	FIGURE 5
DESIGNED BY: JEM	DRAWN BY: DDH/AE	SCALE: 1:1,440	
DATE: 09-04-2024	PROJECT NO: 01.0177641.00	REVISION NO:	



LEGEND

- WELL NAME
- ELEVATION MAY NOT BE RELIABLE
- JUNE 2024 GROUNDWATER ELEVATION
- INDICATES WELL SURVEYED BY GREEN SEAL ENVIRONMENTAL, LLC IN APRIL OR NOVEMBER 2023

MW-403S | 27.53**

- SHALLOW MONITORING WELL
- INTERMEDIATE MONITORING WELL
- DEEP MONITORING WELL
- DESTROYED MONITORING WELL
- SURFACE WATER SAMPLE
- STAFF GAUGE
- AIRPORT MONITORING WELL
- BARNSTABLE FIRE DISTRICT MUNICIPAL SUPPLY WELL
- TOWN OF BARNSTABLE MUNICIPAL SUPPLY WELL
- EXISTING GROUNDWATER RECOVERY WELL
- HISTORICAL RECOVERY WELL
- ROADS
- ASSESSORS PARCEL DATA
- MFTF PROPERTY BOUNDARY
- INTERMEDIATE/DEEP JUNE 2024 GROUNDWATER CONTOURS

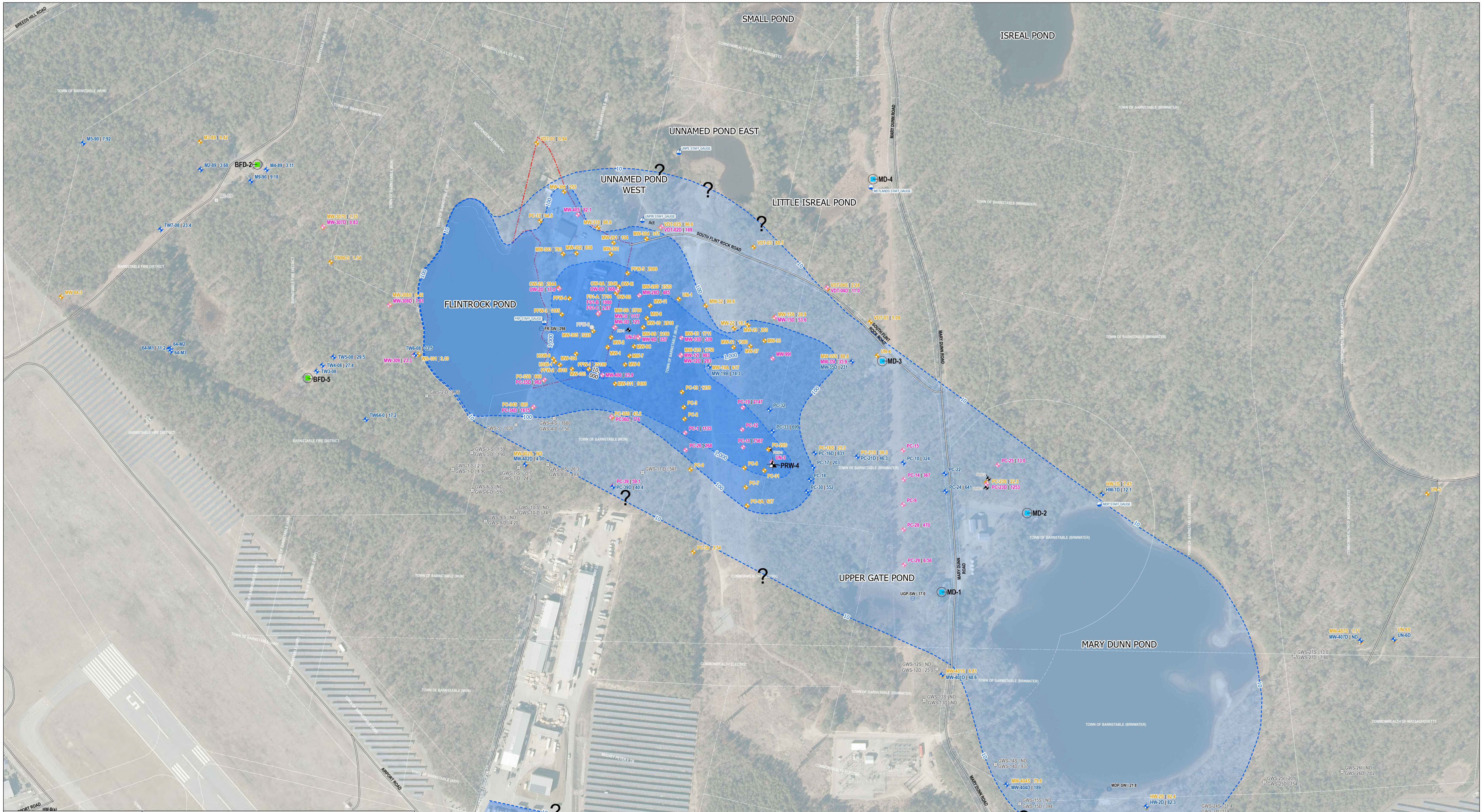
SOURCE:
1) THIS MAP CONTAINS THE 2023 AERIAL IMAGERY MAP SERVICE DISTRIBUTED BY MASSGIS ON MAY 16, 2024. THE PLANNING, ACQUISITION, PROCESSING, AND CREATION OF DERIVATIVE PRODUCTS BY MASSGIS AND NV5 GEOSPATIAL OF LEXINGTON, KY. THE IMAGERY WAS ACQUIRED BETWEEN FEBRUARY 21 AND APRIL 28, 2023.
2) THE LEVEL 3 ASSESSORS' PARCEL MAPPING DATA SET WAS DEVELOPED THROUGH COMPETITIVE PROCUREMENT FUNDED BY MASSGIS. THE SPECIFICATION FOR THIS WORK WAS LEVEL 3 OF THE MASGIS DIGITAL PARCEL STANDARD. THE FEATURE SERVICE WAS DISTRIBUTED BY MASSGIS ON SEPTEMBER 14, 2023.

NOTES:
1) ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2) GZA OBSERVED ADDITIONAL MONITORING WELLS AT THE SITE THAT WERE NOT IDENTIFIED ON HISTORICAL PLANS, REPORTS, OR OTHER DOCUMENTATION AVAILABLE TO US. THESE WELLS ARE LABELED AS UN-1 THROUGH UN-6 (UN=UNNAMED). THE STATUS OF THESE WELLS MAY BE UPDATED IF ADDITIONAL DATA BECOME AVAILABLE.
3) NA = NOT AVAILABLE. REFERENCE ELEVATION DATA WAS NOT AVAILABLE FOR THESE WELLS WITH THE EXCEPTION OF: MW-7, MW-104, PC-32, TW3-08, AND PC-7 WHICH COULD NOT BE OPENED; AND MW-99I, MW-37S/I/D, MW-36D, PC-9, AND PC-15 WHICH COULD NOT BE LOCATED IN THE FIELD.
4) REFERENCE ELEVATIONS UTILIZED FOR THIS ANALYSIS WERE PROVIDED TO GZA BY BETA GROUP INC. (BETA) WITH THE EXCEPTION OF VERTICAL REFERENCE ELEVATIONS FOR MW-103, VDT-02S/D, VDT-05, UN-1, AND UN-4 WHICH WERE ESTIMATED BY GZA USING A TREMBLE R2 GPS UNIT. AS INDICATED IN THE LEGEND, BETA HAD SELECT WELLS (MARKED WITH AN ASTERISK) SURVEYED BY GREEN SEAL ENVIRONMENTAL, LLC.
5) THE COORDINATES PROVIDED TO GZA BY BETA FOR MONITORING WELL PC-20, APPEAR TO BE INCONSISTENT WITH AVAILABLE HISTORIC PLANS GENERATED PRIOR TO 2020. BASED ON HISTORIC PLANS PRIOR TO 2020, GZA INFERRED THAT A WELL COUPLET LOCATED TO THE NORTH OF THE PROVIDED COORDINATES WITH TOTAL WELL DEPTHS GENERALLY CORRESPONDING TO THE BORING LOGS FOR PC-20S AND PC-20D WAS LIKELY THE ACTUAL LOCATIONS OF THE WELLS. THE MONITORING WELL LOCATIONS SHOWN ON THE PLAN REFLECT THIS ADJUSTMENT. GZA DID OBSERVE A SINGULAR WELL AT THE APPROXIMATE COORDINATES PROVIDED BY BETA FOR PC-20. THIS WELL HAS BEEN RE-LABELED AS UN-3.
6) A SINGLE MONITORING WELL IDENTIFIED AS MW-13 WAS SURVEYED BY GREEN SEAL ENVIRONMENTAL, LLC. HOWEVER, GZA IDENTIFIED TWO WELLS AT THIS LOCATION IN THE FIELD. BASED ON HISTORIC PLANS AND BORING LOGS, TWO WELLS WERE PREVIOUSLY INSTALLED AT THIS GENERAL LOCATION: MW-13 (SHALLOW) AND MW-13D (INTERMEDIATE). IT IS UNCLEAR WHICH WELL CORRESPONDS TO THE SURVEYED DATA.
7) A MONITORING WELL IDENTIFIED AS M3-89 WAS SURVEYED BY GREEN SEAL ENVIRONMENTAL, LLC. BASED ON HISTORICAL PLANS PROVIDED TO GZA BY BARNSTABLE FIRE DISTRICT (BFD), THIS WELL LOCATION CORRESPONDS TO ANOTHER WELL DESIGNATED M2-89. GZA OBSERVED A SECOND MONITORING WELL LOCATED TO THE NORTHEAST THAT APPEARS TO CORRESPOND TO WELL M3-89 BASED ON THE PLANS PROVIDED BY BFD. THE LOCATIONS SHOWN ON THIS PLAN REFLECT THESE CONCLUSIONS.
8) BETA PROVIDED GZA WITH COORDINATES FOR A MONITORING WELL IDENTIFIED AS TW08-9. BASED ON HISTORIC PLANS PROVIDED TO GZA BY THE BARNSTABLE FIRE DISTRICT, THE COORDINATES ARE CONSISTENT WITH THE ACTUAL LOCATION OF WELL TW6-08. THE LOCATION SHOWN ON THIS PLAN REFLECTS THIS CONCLUSION.
9) THE COORDINATES PROVIDED IN THE NOVEMBER 2023 GREEN SEAL ENVIRONMENTAL, LLC SURVEY FOR MONITORING WELL PC-15 ARE APPROXIMATELY THE SAME COORDINATES PROVIDED BY BETA GROUP INC. FOR MONITORING WELL PC-10. IT IS UNCLEAR WHETHER PC-10 OR PC-15 WAS SURVEYED.
10) THE GROUNDWATER ELEVATION AND/OR CONTAMINANT CONCENTRATION CONTOURS SHOWN WERE PREPARED ASSUMING HOMOGENEOUS, ISOTROPIC CONDITIONS WITH RESPECT TO HYDRAULIC CONDUCTIVITY OF THE AQUIFER CONDITIONS AT THE SITE. THESE CONTOURS WERE DEVELOPED BASED ON LIMITED DATA FROM WIDELY SPACED EXPLORATIONS (HORIZONTALLY AND VERTICALLY), INCLUDING GROUNDWATER MONITORING WELLS, AND REPRESENT OUR INTERPRETATION OF LIKELY HYDROGEOLOGICAL CONDITIONS, GROUNDWATER FLOW DIRECTIONS, AND CONTAMINANT DISTRIBUTION.

FORMER MUNICIPAL FIRE TRAINING FACILITY (MFTF)
155 SOUTH FLINT ROCK ROAD
BARNSTABLE, MASSACHUSETTS

INTERMEDIATE/DEEP GROUNDWATER CONTOUR PLAN
JUNE 2024

PREPARED BY: GZA GeoEnvironmental, Inc. www.gza.com		PREPARED FOR: BARNSTABLE COUNTY FIRE TRAINING FACILITY	
PROJ MGR: JEM	REVIEWED BY: JRP	CHECKED BY: DEL	FIGURE 6
DESIGNED BY: JEM	DRAWN BY: DDH/AE	SCALE: 1:1,440	
DATE: 09-04-2024	PROJECT NO: 01.0177641.00	REVISION NO:	



LEGEND

MW-40S | 6.54 — WELL NAME — PFAS6 SUM IN NANOGRAMS PER LITER - JUNE 2024 SAMPLING ROUND

- SHALLOW MONITORING WELL
- INTERMEDIATE MONITORING WELL
- DEEP MONITORING WELL
- DESTROYED MONITORING WELL
- GROUNDWATER GRAB SAMPLE COLLECTED BY BETA BETWEEN AUGUST 2022 AND APRIL 2023
- SURFACE WATER SAMPLE
- STAFF GAUGE
- HISTORICAL RECOVERY WELL
- EXISTING GROUNDWATER RECOVERY WELL
- AIRPORT MONITORING WELL
- BARNSTABLE FIRE DISTRICT MUNICIPAL SUPPLY WELL
- TOWN OF BARNSTABLE MUNICIPAL SUPPLY WELL
- MFTF PROPERTY BOUNDARY
- SHALLOW OVERBURDEN PFAS6 SUM IN GROUNDWATER ISOPLETH (JUNE 2024 DATA)
- ASSESSORS PARCEL DATA
- ROADS

SOURCE:

1) THIS MAP CONTAINS THE 2023 AERIAL IMAGERY MAP SERVICE DISTRIBUTED BY MASSGIS ON MAY 16, 2024. THE PLANNING, ACQUISITION, PROCESSING, AND CREATION OF DERIVATIVE PRODUCTS BY MASSGIS AND NV5 GEOSPATIAL OF LEXINGTON, KY. THE IMAGERY WAS ACQUIRED BETWEEN FEBRUARY 21 AND APRIL 28, 2023.
2) THE LEVEL 3 ASSESSORS' PARCEL MAPPING DATA SET WAS DEVELOPED THROUGH COMPETITIVE PROCUREMENT FUNDED BY MASSGIS. THE SPECIFICATION FOR THIS WORK WAS LEVEL 3 OF THE MASGIS DIGITAL PARCEL STANDARD. THE FEATURE SERVICE WAS DISTRIBUTED BY MASSGIS ON SEPTEMBER 14, 2023.

NOTES:

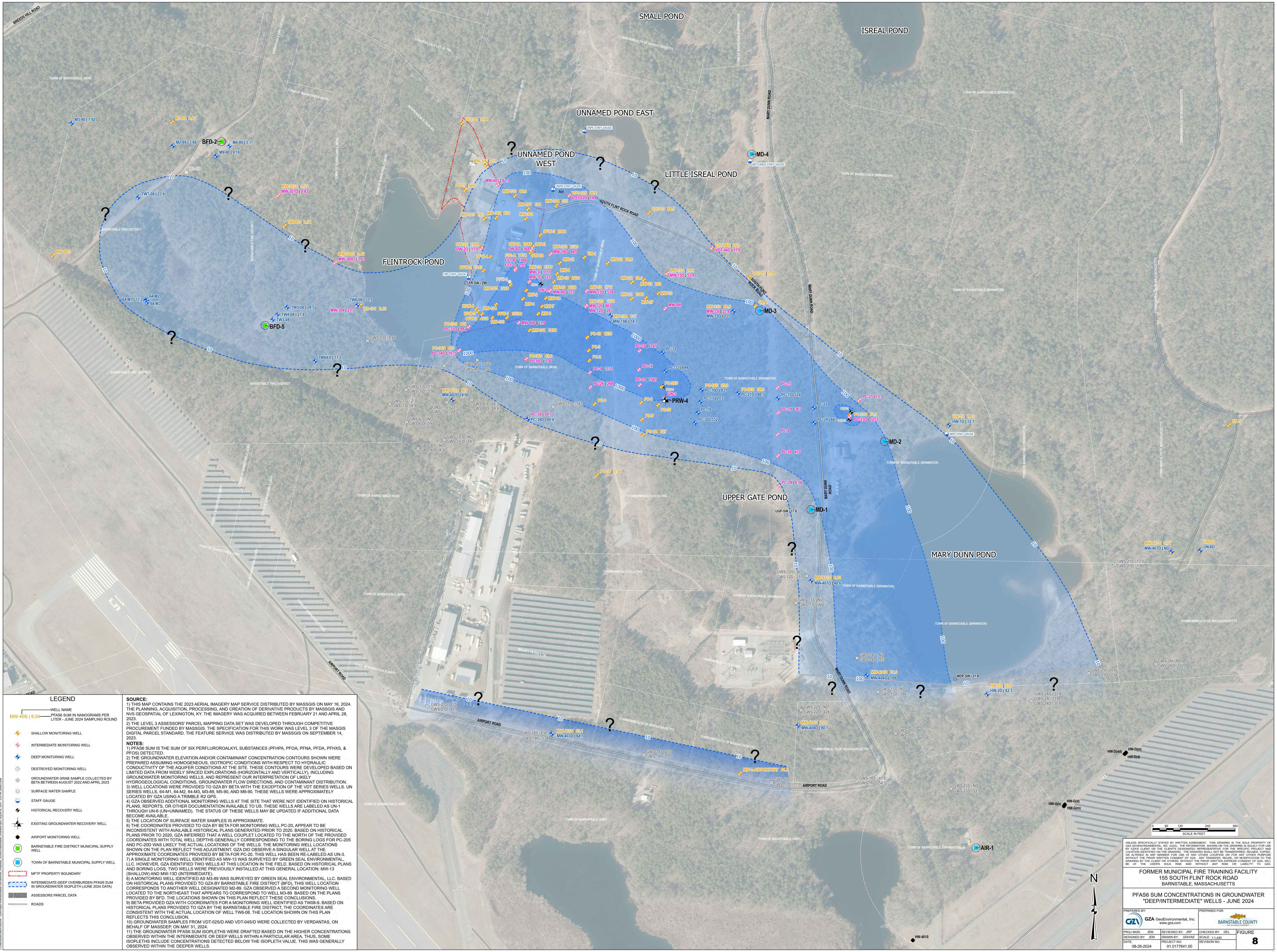
1) PFAS6 SUM IS THE SUM OF SIX PERFLUROROALKYL SUBSTANCES (PFHPA, PFOA, PFNA, PFDA, PFHXS, & PFOS) DETECTED.
2) THE GROUNDWATER ELEVATION AND/OR CONTAMINANT CONCENTRATION CONTOURS SHOWN WERE PREPARED ASSUMING HOMOGENEOUS, ISOTROPIC CONDITIONS WITH RESPECT TO HYDRAULIC CONDUCTIVITY OF THE AQUIFER CONDITIONS AT THE SITE. THESE CONTOURS WERE DEVELOPED BASED ON LIMITED DATA FROM WIDELY SPACED EXPLORATIONS (HORIZONTALLY AND VERTICALLY), INCLUDING GROUNDWATER MONITORING WELLS, AND REPRESENT OUR INTERPRETATION OF LIKELY HYDROGEOLOGICAL CONDITIONS, GROUNDWATER FLOW DIRECTIONS, AND CONTAMINANT DISTRIBUTION.
3) WELL LOCATIONS WERE PROVIDED TO GZA BY BETA WITH THE EXCEPTION OF THE VDT SERIES WELLS. UN SERIES WELLS, 64-M1, 64-M2, 64-M3, M3-89, M5-90, AND M9-90. THESE WELLS WERE APPROXIMATELY LOCATED BY GZA USING A TRIMBLE R2 GPS.
4) GZA OBSERVED ADDITIONAL MONITORING WELLS AT THE SITE THAT WERE NOT IDENTIFIED ON HISTORICAL PLANS, REPORTS, OR OTHER DOCUMENTATION AVAILABLE TO US. THESE WELLS ARE LABELED AS UN-1 THROUGH UN-6 (UN=UNNAMED). THE STATUS OF THESE WELLS MAY BE UPDATED IF ADDITIONAL DATA BECOME AVAILABLE.
5) THE LOCATION OF SURFACE WATER SAMPLES IS APPROXIMATE.
6) THE COORDINATES PROVIDED TO GZA BY BETA FOR MONITORING WELL PC-20, APPEAR TO BE INCONSISTENT WITH AVAILABLE HISTORICAL PLANS GENERATED PRIOR TO 2020. BASED ON HISTORICAL PLANS PRIOR TO 2020, GZA INFERRED THAT A WELL COUPLET LOCATED TO THE NORTH OF THE PROVIDED COORDINATES WITH TOTAL WELL DEPTHS GENERALLY CORRESPONDING TO THE BORING LOGS FOR PC-20S AND PC-20D WAS LIKELY THE ACTUAL LOCATIONS OF THE WELLS. THE MONITORING WELL LOCATIONS SHOWN ON THE PLAN REFLECT THIS ADJUSTMENT. GZA DID OBSERVE A SINGULAR WELL AT THE APPROXIMATE COORDINATES PROVIDED BY BETA FOR PC-20. THIS WELL HAS BEEN RE-LABELED AS UN-3.
7) A SINGLE MONITORING WELL IDENTIFIED AS MW-13 WAS SURVEYED BY GREEN SEAL ENVIRONMENTAL, LLC. HOWEVER, GZA IDENTIFIED TWO WELLS AT THIS LOCATION IN THE FIELD. BASED ON HISTORICAL PLANS AND BORING LOGS, TWO WELLS WERE PREVIOUSLY INSTALLED AT THIS GENERAL LOCATION: MW-13 (SHALLOW) AND MW-13D (INTERMEDIATE).
8) A MONITORING WELL IDENTIFIED AS M3-89 WAS SURVEYED BY GREEN SEAL ENVIRONMENTAL, LLC. BASED ON HISTORICAL PLANS PROVIDED TO GZA BY BARNSTABLE FIRE DISTRICT (BFD), THIS WELL LOCATION CORRESPONDS TO ANOTHER WELL DESIGNATED M2-89. GZA OBSERVED A SECOND MONITORING WELL LOCATED TO THE NORTHEAST THAT APPEARS TO CORRESPOND TO WELL M3-89 BASED ON THE PLANS PROVIDED BY BFD. THE LOCATIONS SHOWN ON THIS PLAN REFLECT THESE CONCLUSIONS.
9) BETA PROVIDED GZA WITH COORDINATES FOR A MONITORING WELL IDENTIFIED AS TW08-9. BASED ON HISTORICAL PLANS PROVIDED TO GZA BY THE BARNSTABLE FIRE DISTRICT, THE COORDINATES ARE CONSISTENT WITH THE ACTUAL LOCATION OF WELL TW6-08. THE LOCATION SHOWN ON THIS PLAN REFLECTS THIS CONCLUSION.
10) GROUNDWATER SAMPLES FROM VDT-02S/D AND VDT-04S/D WERE COLLECTED BY VERDANTAS, ON BEHALF OF MASSDEP, ON MAY 31, 2024.
11) THE PC SERIES MONITORING WELLS LOCATED NEAR PRW-4 ARE SCREENED JUST BELOW THE WATER TABLE AND, THUS, THEIR PFAS6 SUM CONCENTRATIONS WERE USED TO HELP INFORM THE SHALLOW GROUNDWATER ISOPLETHS.

0 60 120 240 360
SCALE IN FEET

FORMER MUNICIPAL FIRE TRAINING FACILITY
155 SOUTH FLINT ROCK ROAD
BARNSTABLE, MASSACHUSETTS

PFAS6 SUM CONCENTRATIONS IN GROUNDWATER "SHALLOW" WELLS - JUNE 2024

PREPARED BY: GZA GeoEnvironmental, Inc. www.gza.com		PREPARED FOR: BARNSTABLE COUNTY CAPE COD REGIONAL GOVERNMENT	
PROJ MGR: JEM	REVIEWED BY: JRP	CHECKED BY: DEL	FIGURE 7
DESIGNED BY: JEM	DRAWN BY: DDH/AE	SCALE: 1:1,440	
DATE: 08-26-2024	PROJECT NO: 01.0177641.00	REVISION NO:	



LEGEND

- WELL NAME
- MW-40S | 6.54 — PFAS6 SUM IN NANOGRAMS PER LITER - JUNE 2024 SAMPLING ROUND
- SHALLOW MONITORING WELL
- INTERMEDIATE MONITORING WELL
- DEEP MONITORING WELL
- DESTROYED MONITORING WELL
- GROUNDWATER GRAB SAMPLE COLLECTED BY BETA BETWEEN AUGUST 2022 AND APRIL 2023
- SURFACE WATER SAMPLE
- STAFF GAUGE
- HISTORICAL RECOVERY WELL
- EXISTING GROUNDWATER RECOVERY WELL
- AIRPORT MONITORING WELL
- BARNSTABLE FIRE DISTRICT MUNICIPAL SUPPLY WELL
- TOWN OF BARNSTABLE MUNICIPAL SUPPLY WELL
- MFTF PROPERTY BOUNDARY
- INTERMEDIATE-DEEP OVERBURDEN PFAS6 SUM IN GROUNDWATER ISOPLETH (JUNE 2024 DATA)
- ASSESSORS PARCEL DATA
- ROADS

SOURCE:

1) THIS MAP CONTAINS THE 2023 AERIAL IMAGERY MAP SERVICE DISTRIBUTED BY MASSGIS ON MAY 16, 2024. THE PLANNING, ACQUISITION, PROCESSING, AND CREATION OF DERIVATIVE PRODUCTS BY MASSGIS AND NV5 GEOSPATIAL OF LEXINGTON, KY. THE IMAGERY WAS ACQUIRED BETWEEN FEBRUARY 21 AND APRIL 28, 2023.
2) THE LEVEL 3 ASSESSORS' PARCEL MAPPING DATA SET WAS DEVELOPED THROUGH COMPETITIVE PROCUREMENT FUNDED BY MASSGIS. THE SPECIFICATION FOR THIS WORK WAS LEVEL 3 OF THE MASGIS DIGITAL PARCEL STANDARD. THE FEATURE SERVICE WAS DISTRIBUTED BY MASSGIS ON SEPTEMBER 14, 2023.

NOTES:

1) PFAS6 SUM IS THE SUM OF SIX PERFLUROROALKYL SUBSTANCES (PFHPA, PFOA, PFNA, PFDA, PFHXS, & PFOS) DETECTED.
2) THE GROUNDWATER ELEVATION AND/OR CONTAMINANT CONCENTRATION CONTOURS SHOWN WERE PREPARED ASSUMING HOMOGENEOUS, ISOTROPIC CONDITIONS WITH RESPECT TO HYDRAULIC CONDUCTIVITY OF THE AQUIFER CONDITIONS AT THE SITE. THESE CONTOURS WERE DEVELOPED BASED ON LIMITED DATA FROM WIDELY SPACED EXPLORATIONS (HORIZONTALLY AND VERTICALLY), INCLUDING GROUNDWATER MONITORING WELLS, AND REPRESENT OUR INTERPRETATION OF LIKELY HYDROGEOLOGICAL CONDITIONS, GROUNDWATER FLOW DIRECTIONS, AND CONTAMINANT DISTRIBUTION.
3) WELL LOCATIONS WERE PROVIDED TO GZA BY BETA WITH THE EXCEPTION OF THE VDT SERIES WELLS. UN SERIES WELLS, 64-M1, 64-M2, 64-M3, M3-89, M5-90, AND M9-90. THESE WELLS WERE APPROXIMATELY LOCATED BY GZA USING A TRIMBLE R2 GPS.
4) GZA OBSERVED ADDITIONAL MONITORING WELLS AT THE SITE THAT WERE NOT IDENTIFIED ON HISTORICAL PLANS, REPORTS, OR OTHER DOCUMENTATION AVAILABLE TO US. THESE WELLS ARE LABELED AS UN-1 THROUGH UN-6 (UN=UNNAMED). THE STATUS OF THESE WELLS MAY BE UPDATED IF ADDITIONAL DATA BECOME AVAILABLE.
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10) GROUNDWATER SAMPLES FROM VDT-02S/D AND VDT-04S/D WERE COLLECTED BY VERDANTAS, ON BEHALF OF MASSDEP, ON MAY 31, 2024.
11) THE GROUNDWATER PFAS6 SUM ISOPLETHS WERE DRAFTED BASED ON THE HIGHER CONCENTRATIONS OBSERVED WITHIN THE INTERMEDIATE OR DEEP WELLS WITHIN A PARTICULAR AREA. THUS, SOME ISOPLETHS INCLUDE CONCENTRATIONS DETECTED BELOW THE ISOPLETH VALUE. THIS WAS GENERALLY OBSERVED WITHIN THE DEEPER WELLS.

FORMER MUNICIPAL FIRE TRAINING FACILITY
155 SOUTH FLINT ROCK ROAD
BARNSTABLE, MASSACHUSETTS

PFAS6 SUM CONCENTRATIONS IN GROUNDWATER
"DEEP/INTERMEDIATE" WELLS - JUNE 2024

PREPARED BY:		PREPARED FOR:	
GZA GeoEnvironmental, Inc. www.gza.com		BARNSTABLE COUNTY	
PROJ MGR: JEM	REVIEWED BY: JRP	CHECKED BY: DEL	FIGURE 8
DESIGNED BY: JEM	DRAWN BY: DDH/AE	SCALE: 1:1,440	
DATE: 08-26-2024	PROJECT NO: 01.0177641.00	REVISION NO:	

Appendix A - Limitations

USE OF REPORT

1. GZA GeoEnvironmental, Inc. (GZA) prepared this Report on behalf of, and for the exclusive use of our Client for the stated purpose(s) and location(s) identified in the Proposal for Services and/or Report. Use of this Report, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions; and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not expressly identified in the agreement, for any use, without our prior written permission, shall be at the party's sole risk, and without any liability to GZA.

STANDARD OF CARE

2. GZA's findings and conclusions are based on work conducted as part of the Scope of Services set forth in the Proposal for Services and/or Report and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work. Conditions other than described in this report may be found at the subject location(s).

3. GZA's services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services, at the same time, under similar conditions, at the same or similar property. No warranty, express or implied, is made. Specifically, GZA does not and cannot represent that the Site contains no hazardous material, oil, or other latent condition beyond that observed by GZA during its study. Additionally, GZA makes no warranty that any response action or recommended action will achieve all of its objectives or that the findings of this study will be upheld by a local, state, or federal agency.

4. In conducting our work, GZA relied upon certain information made available by public agencies. Client and/or others. GZA did not attempt to independently verify the accuracy or completeness of that information. Inconsistencies in this information which we have noted, if any, are discussed in the Report.

SUBSURFACE CONDITIONS

5. The generalized soil profile(s) provided in our Report are based on widely-spaced subsurface explorations and are intended only to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, were developed utilizing interpolation/extrapolation methods, and were based on our assessment of subsurface conditions. The composition of strata, and the transitions between strata, may be more variable and more complex than indicated. For more specific information on soil conditions at a specific location refer to the exploration logs. The nature and extend of variations between these explorations may not become evident until further exploration or construction. If variations or other latent conditions then become evident, it will be necessary to reevaluate the conclusions and recommendations of this Report.

6. Water level readings have been made, as described in this Report, in the specified monitoring wells at the specified times and under the stated conditions. These data have been reviewed and interpretations have been made in this Report. Fluctuations in the level of the groundwater, however, occur due to temporal or spatial variations in areal recharge rates and heterogeneities, the presence of subsurface utilities, and/or natural or artificially induced perturbations. The observed water table and hydraulic heads may be other than indicated in the Report.

COMPLIANCE WITH CODES AND REGULATIONS

7. We used reasonable care in identifying and interpreting applicable codes and regulations necessary to execute our scope of work. These codes and regulations are subject to various, and possibly contradictory, interpretations. Interpretations and compliance with codes and regulations by other parties is beyond our control.

SCREENING AND ANALYTICAL TESTING

8. GZA collected environmental samples at the locations identified in the Report. These samples were analyzed for the specific parameters identified in the Report. Additional constituents, for which analyses were not conducted, may be present in soil, groundwater, surface water, sediment, and/or air. Future Site activities and uses may result in a requirement for additional testing.

9. Our interpretation of field screening and laboratory data is presented in the Report. Unless noted otherwise, we relied upon the laboratory's QA/QC program to validate these data.

10. Variations in the types and concentrations of contaminants observed at a given location or time may occur due to release mechanisms, disposal practices, changes in flow paths, and/or the influence of various physical, chemical, biological, or radiological processes. Subsequently observed concentrations may be other than indicated in the Report.

INTERPRETATION OF DATA

11. Our opinions are based on available information and data as described in the Report, and on our professional judgment. Additional observations made over time, and/or space, may not support he opinions provided in the Report.

ADDITIONAL INFORMATION

12. In the event that the Client or others authorized to use this report obtain additional information on environmental or hazardous waste issues at the Site not contained in this Report, such information shall be brought to GZA's attention forthwith. GZA will evaluate such information and, on the basis of this evaluation, may modify the conclusions stated in this Report.

ADDITIONAL SERVICES

13. GZA recommends that we be retained to provide services during any future investigations, design, implementation, activities, construction, and/or property development/redevelopment of the Site. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.

Appendix B - Transmittal Form (BWSC108)

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC 108

Release Tracking Number
4 - 26179

COMPREHENSIVE RESPONSE ACTION TRANSMITTAL FORM & PHASE I COMPLETION STATEMENT

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

A. SITE LOCATION:

1. Site Name: BARNSTABLE COUNTY FIRE TRAINING ACADEMY

2. Street Address: 155 SOUTH FLINT ROCK ROAD

3. City/Town: BARNSTABLE 4. ZIP Code: 026300000

☑ 5. Check here if the disposal site that is the source of the release is Tier Classified. Check the current Tier Classification Category:

☑ a. Tier I ☐ b. Tier ID ☐ c. Tier II

B. THIS FORM IS BEING USED TO: (check all that apply)

☐ 1. Submit a **Phase I Completion Statement,** pursuant to 310 CMR 40.0484.

☐ 2. Submit a **Revised Phase I Completion Statement,** pursuant to 310 CMR 40.0484.

☐ 3. Submit a **Phase II Scope of Work,** pursuant to 310 CMR 40.0834.

☑ 4. Submit an **interim Phase II Report.** This report does not satisfy the response action deadline requirements in 310 CMR 40.0500.

☐ 5. Submit a **final Phase II Report and Completion Statement,** pursuant to 310 CMR 40.0836.

☐ 6. Submit a **Revised Phase II Report and Completion Statement,** pursuant to 310 CMR 40.0836.

☐ 7. Submit a **Phase III Remedial Action Plan and Completion Statement,** pursuant to 310 CMR 40.0862.

☐ 8. Submit a **Revised Phase III Remedial Action Plan and Completion Statement,** pursuant to 310 CMR 40.0862.

☐ 9. Submit a **Phase IV Remedy Implementation Plan,** pursuant to 310 CMR 40.0874.

☐ 10. Submit a **Modified Phase IV Remedy Implementation Plan,** pursuant to 310 CMR 40.0874.

☐ 11. Submit an **As-Built Construction Report,** pursuant to 310 CMR 40.0875.

☐ 12. Submit a **Phase IV Status Report,** pursuant to 310 CMR 40.0877.

☐ 13. Submit a **Phase IV Completion Statement,** pursuant to 310 CMR 40.0878 and 40.0879.

Specify the outcome of Phase IV activities: (check one)

☐ a. Phase V Operation, Maintenance or Monitoring of the Comprehensive Remedial Action is necessary to achieve a Permanent or Temporary Solution.

☐ b. The requirements of a Permanent Solution have been met. A completed Permanent Solution Statement and Report (BWSC104) will be submitted to DEP.

☐ c. The requirements of a Temporary Solution have been met. A completed Temporary Solution Statement and Report (BWSC104) will be submitted to DEP.

B. THIS FORM IS BEING USED TO (cont.): (check all that apply)

☐ 14. Submit a **Revised Phase IV Completion Statement,** pursuant to 310 CMR 40.0878 and 40.0879.

☐ 15. Submit a **Phase V Status Report,** pursuant to 310 CMR 40.0892.

☐ 16. Submit a **Remedial Monitoring Report.** (This report can only be submitted through eDEP.)

a. Type of Report: (check one) ☐ i. Initial Report ☐ ii. Interim Report ☐ iii. Final Report

b. Frequency of Submittal: (check all that apply)

☐ i. A Remedial Monitoring Report(s) submitted monthly to address an Imminent Hazard.

☐ ii. A Remedial Monitoring Report(s) submitted monthly to address a Condition of Substantial Release Migration.

☐ iii. A Remedial Monitoring Report(s) submitted every six months, concurrent with a Status Report.

☐ iv. A Remedial Monitoring Report(s) submitted, concurrent with a Status Report.

c. Status of Site: (check one) ☐ i. Phase IV ☐ ii. Phase V ☐ iii. Remedy Operation Status ☐ iv. Temporary Solution

d. Number of Remedial Systems and/or Monitoring Programs: _____

A separate BWSC108A, CRA Remedial Monitoring Report, must be filled out for each Remedial System and/or Monitoring Program addressed by this transmittal form.

☐ 17. Submit a **Remedy Operation Status,** pursuant to 310 CMR 40.0893.

☐ 18. Submit a **Status Report to maintain a Remedy Operation Status,** pursuant to 310 CMR 40.0893(2).

☐ 19. Submit a **Transfer and/or a Modification of Persons Maintaining a Remedy Operation Status (ROS),** pursuant to 310 CMR 40.0893(5) (check one, or both, if applicable).

☐ a. Submit a Transfer of Persons Maintaining an ROS (the transferee should be the person listed in Section D, "Person Undertaking Response Actions").

☐ b. Submit a Modification of Persons Maintaining an ROS (the primary representative should be the person listed in Section D, "Person Undertaking Response Actions").

c. Number of Persons Maintaining an ROS not including the primary representative: _____

☐ 20. Submit a **Termination of a Remedy Operation Status,** pursuant to 310 CMR 40.0893(6).(check one)

☐ a. Submit a notice indicating ROS performance standards have not been met. A plan and timetable pursuant to 310 CMR 40.0893(6)(b) for resuming the ROS are attached.

☐ b. Submit a notice of Termination of ROS.

☐ 21. Submit a **Phase V Completion Statement,** pursuant to 310 CMR 40.0894.

Specify the outcome of Phase V activities: (check one)

☐ a. The requirements of a Permanent Solution have been met. A completed Permanent Solution Statement and Report (BWSC104) will be submitted to DEP.

☐ b. The requirements for a Temporary Solution have been met. A completed Temporary Solution Statement and Report (BWSC104) will be submitted to DEP.

☐ 22. Submit a **Revised Phase V Completion Statement,** pursuant to 310 CMR 40.0894.

☐ 23. Submit a **Temporary Solution Status Report,** pursuant to 310 CMR 40.0898.

☐ 24. Submit a **Plan for the Application of Remedial Additives** near a sensitive receptor, pursuant to 310 CMR 40.0046(3).

a. Status of Site: (check one)

☐ i. Phase IV ☐ ii. Phase V ☐ iii. Remedy Operation Status ☐ iv. Temporary Solution

C. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> *if Section B indicates that a* ***Phase I, Phase II, Phase III, Phase IV or Phase V Completion Statement*** *and/or a* ***Termination of a Remedy Operation Status*** *is being submitted*, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> *if Section B indicates that a* ***Phase II Scope of Work*** *or a* ***Phase IV Remedy Implementation Plan*** *is being submitted,* the response action(s) that is (are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> *if Section B indicates that an* ***As-Built Construction Report,*** *a* ***Remedy Operation Status,*** *a* ***Phase IV, Phase V or Temporary Solution Status Report,*** *a* ***Status Report to Maintain a Remedy Operation Status,*** *a* ***Transfer or Modification of Persons Maintaining a Remedy Operation Status*** *and/or a* ***Remedial Monitoring Report*** *is being submitted,* the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP#: 2647
2. First Name: DAVID E
3. Last Name: LEONE
4. Telephone: 7812785766
5. Ext.:
6. Email: davide.leone@gza.com
7. Signature:
8. Date: (mm/dd/yyyy)
9. LSP Stamp:

COMPREHENSIVE RESPONSE ACTION TRANSMITTAL FORM & PHASE I COMPLETION STATEMENT

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

D. PERSON UNDERTAKING RESPONSE ACTIONS:

1. Check all that apply: ☑ a. change in contact name ☐ b. change of address ☐ c. change in the person undertaking response actions

2. Name of Organization: BARNSTABLE COUNTY COMMISSIONERS

3. Contact First Name: PAUL 4. Last Name: RUSZALA

5. Street: 3195 MAIN ST 6. Title:

7. City/Town: BARNSTABLE 8. State: MA 9. ZIP Code: 026301105

10. Telephone: 5083756643 11. Ext: 12. Email: paul.ruszala@capecod.gov

E. RELATIONSHIP TO SITE OF PERSON UNDERTAKING RESPONSE ACTIONS: ☐ Check here to change relationship

☑ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter

☑ e. Other RP or PRP Specify: NON-SPECIFIED PRP

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Undertaking Response Actions Specify Relationship:

F. REQUIRED ATTACHMENT AND SUBMITTALS:

☑ 1. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

☑ 2. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the submittal of any Phase Reports to DEP.

☐ 3. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the availability of a Phase III Remedial Action Plan.

☐ 4. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the availability of a Phase IV Remedy Implementation Plan.

☐ 5. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of any field work involving the implementation of a Phase IV Remedial Action.

☐ 6. If submitting a Transfer of a Remedy Operation Status (as per 310 CMR 40.0893(5)), check here to certify that a statement detailing the compliance history for the person making this submittal (transferee) is attached.

☐ 7. If submitting a Modification of a Remedy Operation Status (as per 310 CMR 40.0893(5)), check here to certify that a statement detailing the compliance history for each new person making this submittal is attached.

☐ 8. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to: BWSC.eDEP@Mass.Gov.

☑ 9. Check here to certify that the LSP Opinion containing the material facts, data including, but not limited to: pressure measurements, maps, graphs, or diagrams, and other information is attached.

G. CERTIFICATION OF PERSON UNDERTAKING RESPONSE ACTIONS:

1. I, _____, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

>*if Section B indicates that this is a* **Modification of a Remedy Operation Status (ROS),** I attest under the pains and penalties of perjury that I am fully authorized to act on behalf of all persons performing response actions under the ROS as stated in 310 CMR 40.0893(5)(d) to receive oral and written correspondence from MassDEP with respect to performance of response actions under the ROS, and to receive a statement of fee amount as per 4.03(3).

I understand that any material received by the Primary Representative from MassDEP shall be deemed received by all the persons performing response actions under the ROS, and I am aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate or incomplete information.

2. By: _____ (Signature) 3. Title: _____

4. For: BARNSTABLE COUNTY COMMISSIONERS (Name of person or entity recorded in Section D) 5. Date: _____ (mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section D.

7. Street: _____

8. City/Town: _____ 9. State: _____ 10. ZIP Code: _____

11. Telephone: _____ 12. Ext.: _____ 13. Email: _____

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (DEP USE ONLY:)

Statement of Provisions

Attachment to: BWSC-108, Section F, Question 1:

Release Tracking Number 4-26179

Response Actions have been completed in accordance with the Administrative Consent Order (ACO) issued by the Massachusetts Department of Environmental Protection (MassDEP) Bureau of Waste Site Cleanup (BWSC); Enforcement Document Number 00013761.

Appendix C – Historical Municipal Fire Training Facility Plan

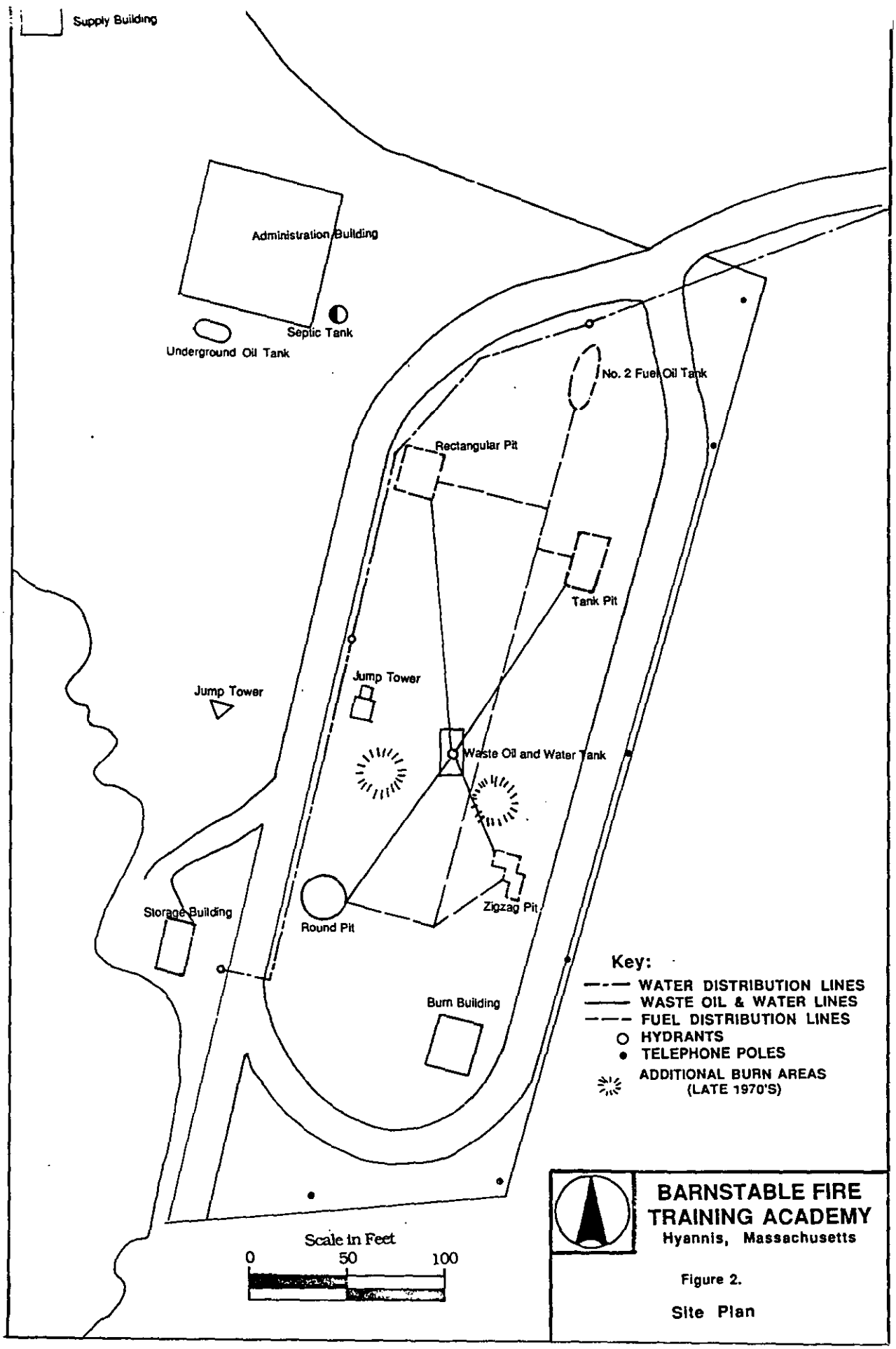

Figure 2.

Site Plan

Appendix D – Historic Site Plan with Hot Spot Area

Figure 19 Hot Spot Soil Boring Locations

Appendix E –Soil Laboratory Analytical Results

ANALYTICAL REPORT

Lab Number:	L2429018
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Jennifer McKechnie
Phone:	(781) 278-3864
Project Name:	BARNSTABLE COUNTY FTA
Project Number:	01.0177641.00
Report Date:	08/13/24

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0825), DoD (L2474), FL (E87814), IL (200081), IN (C-MA-04), KY (KY98046), LA (85084), ME (MA00030), MD (350), MI (9110), MN (025-999-495), NJ (MA015), NY (11627), NC (685), OR (MA-0262), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #525-23-107-88708A1), USFWS (Permit #A24920).

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

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00

Lab Number: L2429018
Report Date: 08/13/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2429018-01	VDT-01_0-9IN	SOIL	BARNSTABLE, MA	05/20/24 09:10	05/24/24
L2429018-02	VDT-02_5-6FT	SOIL	BARNSTABLE, MA	05/20/24 10:25	05/24/24
L2429018-03	VDT-04_0-9IN	SOIL	BARNSTABLE, MA	05/21/24 10:10	05/24/24
L2429018-04	VDT-04_9-12FT	SOIL	BARNSTABLE, MA	05/21/24 10:25	05/24/24

Project Name:	BARNSTABLE COUNTY FTA	**Lab Number:**	L2429018
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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:	BARNSTABLE COUNTY FTA	**Lab Number:**	L2429018
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Case Narrative (continued)

Report Revision

August 13, 2024: At the client's request, all non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2429018-02: The analysis of Total Solids - SM2540 was requested on the Chain of Custody; however, a sample container was not received. This was verified by the client.

Perfluorinated Alkyl Acids by 1633

L2429018-01, WG1932104-4, and WG1932104-5: 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: Kelly Stenstrom

Title: Technical Director/Representative Date: 08/13/24

ORGANICS

SEMIVOLATILES

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00
Lab Number: L2429018
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2429018-01
Client ID: VDT-01_0-9IN
Sample Location: BARNSTABLE, MA

Date Collected: 05/20/24 09:10
Date Received: 05/24/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 144,1633
Analytical Date: 06/11/24 13:14
Analyst: AC
Percent Solids: 90%

Extraction Method: EPA 1633
Extraction Date: 06/10/24 15:35
Cleanup Method: EPA 1633
Cleanup Date: 06/11/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.224	J	ng/g	0.796	0.050	1
Perfluoropentanoic Acid (PFPeA)	0.123	J	ng/g	0.398	0.056	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.199	0.043	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.796	0.080	1
Perfluorohexanoic Acid (PFHxA)	0.180	J	ng/g	0.199	0.046	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.199	0.023	1
Perfluoroheptanoic Acid (PFHpA)	0.10	J	ng/g	0.199	0.023	1
Perfluorohexanesulfonic Acid (PFHxS)	0.339		ng/g	0.199	0.059	1
Perfluorooctanoic Acid (PFOA)	0.571		ng/g	0.199	0.052	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.796	0.278	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.037	J	ng/g	0.199	0.037	1
Perfluorononanoic Acid (PFNA)	0.157	J	ng/g	0.199	0.078	1
Perfluorooctanesulfonic Acid (PFOS)	4.53		ng/g	0.199	0.079	1
Perfluorodecanoic Acid (PFDA)	0.113	J	ng/g	0.199	0.075	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.796	0.385	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.199	0.042	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.199	0.100	1
Perfluoroundecanoic Acid (PFUnA)	0.072	J	ng/g	0.199	0.051	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.199	0.032	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.199	0.043	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.199	0.082	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.199	0.041	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.199	0.053	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.199	0.106	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.796	0.098	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.796	0.146	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.199	0.038	1

Project Name: BARNSTABLE COUNTY FTA **Lab Number:** L2429018

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2429018-01 Date Collected: 05/20/24 09:10

Client ID: VDT-01_0-9IN Date Received: 05/24/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.796	0.195	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.796	0.166	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.199	0.100	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.199	0.111	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.99	0.249	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.99	0.508	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.398	0.041	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.398	0.031	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.398	0.083	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.398	0.095	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.995	0.143	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.97	0.502	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.97	1.75	1

Project Name: BARNSTABLE COUNTY FTA **Lab Number:** L2429018

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2429018-01 Date Collected: 05/20/24 09:10

Client ID: VDT-01_0-9IN Date Received: 05/24/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	74		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	72		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	74		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	**169**	Q	20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	81		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	65		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	76		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	93		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	90		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	74		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	71		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	70		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	**202**	Q	20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	109		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	74		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	55		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	101		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	72		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	66		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	58		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	51		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	52		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	71		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	59		20-150

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00
Lab Number: L2429018
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2429018-02
Client ID: VDT-02_5-6FT
Sample Location: BARNSTABLE, MA

Date Collected: 05/20/24 10:25
Date Received: 05/24/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 144,1633
Analytical Date: 06/11/24 19:00
Analyst: SL
Percent Solids: 96%

Extraction Method: EPA 1633
Extraction Date: 06/10/24 15:35
Cleanup Method: EPA 1633
Cleanup Date: 06/11/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.796	0.050	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.398	0.056	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.199	0.043	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.796	0.080	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.199	0.046	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.199	0.023	1
Perfluoroheptanoic Acid (PFHpA)	0.038	J	ng/g	0.199	0.023	1
Perfluorohexanesulfonic Acid (PFHxS)	0.177	J	ng/g	0.199	0.059	1
Perfluorooctanoic Acid (PFOA)	0.133	J	ng/g	0.199	0.052	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.796	0.279	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.199	0.037	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.199	0.078	1
Perfluorooctanesulfonic Acid (PFOS)	0.263		ng/g	0.199	0.079	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.199	0.075	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.796	0.385	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.199	0.042	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.199	0.100	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.199	0.051	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.199	0.032	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.199	0.043	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.199	0.082	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.199	0.041	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.199	0.053	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.199	0.106	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.796	0.098	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.796	0.146	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.199	0.038	1

Project Name: BARNSTABLE COUNTY FTA **Lab Number:** L2429018

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2429018-02 Date Collected: 05/20/24 10:25

Client ID: VDT-02_5-6FT Date Received: 05/24/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.796	0.195	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.796	0.166	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.199	0.100	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.199	0.111	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.99	0.249	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.99	0.508	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.398	0.041	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.398	0.031	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.398	0.083	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.398	0.095	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.995	0.143	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.98	0.502	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.98	1.75	1

Project Name: BARNSTABLE COUNTY FTA **Lab Number:** L2429018

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2429018-02 Date Collected: 05/20/24 10:25

Client ID: VDT-02_5-6FT Date Received: 05/24/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	87		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	90		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	90		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	132		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	86		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	86		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	86		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	86		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	96		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	83		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	87		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	86		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	114		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	88		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	80		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	75		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	93		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	69		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	49		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	80		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	51		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	49		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	71		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	66		20-150

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00
Lab Number: L2429018
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2429018-03
Client ID: VDT-04_0-9IN
Sample Location: BARNSTABLE, MA

Date Collected: 05/21/24 10:10
Date Received: 05/24/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 144,1633
Analytical Date: 06/11/24 19:13
Analyst: SL
Percent Solids: 94%

Extraction Method: EPA 1633
Extraction Date: 06/10/24 15:35
Cleanup Method: EPA 1633
Cleanup Date: 06/11/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.791	0.050	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.396	0.055	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.198	0.043	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.791	0.080	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.198	0.046	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.198	0.023	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.198	0.023	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.198	0.059	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.198	0.051	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.791	0.277	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.198	0.036	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.198	0.078	1
Perfluorooctanesulfonic Acid (PFOS)	0.112	J	ng/g	0.198	0.078	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.198	0.074	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.791	0.383	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.198	0.042	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.198	0.099	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.198	0.051	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.198	0.032	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.198	0.043	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.198	0.082	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.198	0.040	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.198	0.052	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.198	0.105	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.791	0.097	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.791	0.145	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.198	0.038	1

Project Name: BARNSTABLE COUNTY FTA **Lab Number:** L2429018

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2429018-03 Date Collected: 05/21/24 10:10

Client ID: VDT-04_0-9IN Date Received: 05/24/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.791	0.194	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.791	0.165	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.198	0.099	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.198	0.111	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.98	0.248	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.98	0.505	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.396	0.040	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.396	0.031	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.396	0.082	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.396	0.094	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.989	0.142	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.95	0.499	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.95	1.74	1

Project Name: BARNSTABLE COUNTY FTA **Lab Number:** L2429018

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2429018-03 Date Collected: 05/21/24 10:10

Client ID: VDT-04_0-9IN Date Received: 05/24/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	80		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	75		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	85		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	128		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	82		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	75		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	78		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	77		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	90		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	74		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	81		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	75		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	114		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	86		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	75		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	67		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	89		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	76		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	61		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	68		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	52		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	49		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	66		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	63		20-150

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00
Lab Number: L2429018
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2429018-04
Client ID: VDT-04_9-12FT
Sample Location: BARNSTABLE, MA

Date Collected: 05/21/24 10:25
Date Received: 05/24/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 144,1633
Analytical Date: 06/11/24 19:26
Analyst: SL
Percent Solids: 94%

Extraction Method: EPA 1633
Extraction Date: 06/10/24 15:35
Cleanup Method: EPA 1633
Cleanup Date: 06/11/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.792	0.050	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.396	0.055	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.198	0.043	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.792	0.080	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.198	0.046	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.198	0.023	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.198	0.023	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.198	0.059	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.198	0.052	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.792	0.277	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.198	0.036	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.198	0.078	1
Perfluorooctanesulfonic Acid (PFOS)	0.084	J	ng/g	0.198	0.078	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.198	0.074	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.792	0.383	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.198	0.042	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.198	0.099	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.198	0.051	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.198	0.032	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.198	0.043	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.198	0.082	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.198	0.040	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.198	0.052	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.198	0.105	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.792	0.097	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.792	0.145	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.198	0.038	1

Project Name: BARNSTABLE COUNTY FTA **Lab Number:** L2429018

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2429018-04 Date Collected: 05/21/24 10:25

Client ID: VDT-04_9-12FT Date Received: 05/24/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.792	0.194	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.792	0.165	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.198	0.099	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.198	0.111	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.98	0.248	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.98	0.505	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.396	0.040	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.396	0.031	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.396	0.082	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.396	0.094	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.990	0.142	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.95	0.500	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.95	1.74	1

Project Name: BARNSTABLE COUNTY FTA **Lab Number:** L2429018

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2429018-04 Date Collected: 05/21/24 10:25

Client ID: VDT-04_9-12FT Date Received: 05/24/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	84		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	84		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	86		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	126		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	82		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	82		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	81		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	83		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	89		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	74		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	87		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	85		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	117		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	100		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	85		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	81		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	110		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	79		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	52		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	74		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	56		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	54		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	76		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	72		20-150

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00
Lab Number: L2429018
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/11/24 11:44
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/10/24 15:35
Cleanup Method: EPA 1633
Cleanup Date: 06/11/24

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-04 Batch: WG1932104-1					
Perfluorobutanoic Acid (PFBA)	0.059	J	ng/g	0.800	0.050
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.400	0.056
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.200	0.043
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.800	0.081
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.200	0.046
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.200	0.023
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.200	0.023
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.200	0.059
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.200	0.052
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.800	0.280
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.200	0.037
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.200	0.078
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.200	0.079
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.200	0.075
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.800	0.387
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.200	0.042
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.200	0.100
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.200	0.051
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.200	0.032
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.200	0.043
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.200	0.082
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.200	0.041
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.200	0.053
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.200	0.106
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.800	0.098
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.800	0.146
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.200	0.038

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00
Lab Number: L2429018
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/11/24 11:44
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/10/24 15:35
Cleanup Method: EPA 1633
Cleanup Date: 06/11/24

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-04 Batch: WG1932104-1					
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.800	0.196
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.800	0.167
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.200	0.100
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.200	0.112
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.00	0.250
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.00	0.510
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.400	0.041
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.400	0.031
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.400	0.083
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.400	0.095
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.00	0.144
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.00	0.505
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.00	1.76

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00
Lab Number: L2429018
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/11/24 11:44
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/10/24 15:35
Cleanup Method: EPA 1633
Cleanup Date: 06/11/24

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-04 Batch: WG1932104-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	84		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	89		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	93		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	140		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	92		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	73		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	89		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	114		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	95		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	87		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	78		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	90		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	96		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	77		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	77		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	89		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	68		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	44		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	71		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	59		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	54		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	64		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	69		20-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00

Lab Number: L2429018
Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1932104-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	95		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	98		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	86		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	99		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	89		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	92		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	108		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	94		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	94		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	100		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	96		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	91		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	90		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	96		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	103		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	101		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	91		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	92		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	100		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	92		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	97		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	95		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE COUNTY FTA

Project Number: 01.0177641.00

Lab Number: L2429018

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1932104-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	72		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	98		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	93		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	103		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	71		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	99		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	103		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	91		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	94		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	104		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	96		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	97		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	93		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	88		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	82		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	70		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	76		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	66		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE COUNTY FTA

Project Number: 01.0177641.00

Lab Number: L2429018

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1932104-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	85				20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	88				20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	95				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	135				20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	92				20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	72				20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	88				20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	115				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	90				20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	90				20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	86				20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	79				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	92				20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	99				20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	82				20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	74				20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	90				20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	72				20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	47				20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	70				20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	57				20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	52				20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	64				20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	69				20-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00

Lab Number: L2429018
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1932104-3								
Perfluorobutanoic Acid (PFBA)	101		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	105		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	104		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	99		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	96		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	103		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	115		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	97		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	84		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	111		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	105		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	101		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	103		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	109		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	106		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	106		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	102		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	100		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	104		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	100		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	106		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	104		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE COUNTY FTA

Project Number: 01.0177641.00

Lab Number: L2429018

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1932104-3								
Perfluorotridecanoic Acid (PFTrDA)	80		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	108		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	103		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	113		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	70		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	108		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	110		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	100		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	102		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	105		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	106		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	107		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	105		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	100		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	75		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	86		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	84		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	73		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE COUNTY FTA

Project Number: 01.0177641.00

Lab Number: L2429018

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1932104-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	88				20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	101				20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	93				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	139				20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	107				20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87				20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	89				20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	110				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	91				20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	89				20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	91				20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	82				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	91				20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	106				20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	84				20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	76				20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	92				20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	74				20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	47				20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	85				20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	63				20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	58				20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	69				20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	70				20-150

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00
Lab Number: L2429018
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1932104-4 WG1932104-5 QC Sample: L2429018-01 Client ID: VDT-01_0-9IN												
Perfluorobutanoic Acid (PFBA)	0.224J	7.89	7.72	95		8.38	103		40-150	8		30
Perfluoropentanoic Acid (PFPeA)	0.123J	3.94	3.99	98		4.31	106		40-150	8		30
Perfluorobutanesulfonic Acid (PFBS)	ND	1.75	1.67	96		1.81	103		40-150	8		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	7.39	7.54	102		7.61	103		40-150	1		30
Perfluorohexanoic Acid (PFHxA)	0.180J	1.97	1.96	90		2.25	105		40-150	14		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	1.86	1.75	94		1.89	101		40-150	8		30
Perfluoroheptanoic Acid (PFHpA)	0.10J	1.97	2.23	108		2.48	120		40-150	11		30
Perfluorohexanesulfonic Acid (PFHxS)	0.339	1.8	2.14	100		2.27	107		40-150	6		30
Perfluorooctanoic Acid (PFOA)	0.571	1.97	2.18	82		2.38	91		40-150	9		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	7.49	7.58	101		8.81	117		40-150	15		30
Perfluoroheptanesulfonic Acid (PFHpS)	0.037J	1.88	2.00	104		2.11	110		40-150	5		30
Perfluorononanoic Acid (PFNA)	0.157J	1.97	2.05	96		2.25	106		40-150	9		30
Perfluorooctanesulfonic Acid (PFOS)	4.53	1.83	5.66	62		6.21	92		40-150	9		30
Perfluorodecanoic Acid (PFDA)	0.113J	1.97	2.09	100		2.15	103		40-150	3		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	7.57	7.60	100		9.06	119		40-150	18		30
Perfluorononanesulfonic Acid (PFNS)	ND	1.9	1.90	100		2.00	105		40-150	5		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	1.97	1.90	96		1.86	94		40-150	2		30
Perfluoroundecanoic Acid (PFUnA)	0.072J	1.97	1.99	97		2.21	108		40-150	10		30
Perfluorodecanesulfonic Acid (PFDS)	ND	1.9	2.03	107		2.14	112		40-150	5		30
Perfluorooctanesulfonamide (PFOSA)	ND	1.97	1.99	101		2.17	110		40-150	9		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	1.97	1.78	90		2.29	116		40-150	25		30
Perfluorododecanoic Acid (PFDoA)	ND	1.97	1.88	95		2.08	105		40-150	10		30

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE COUNTY FTA

Project Number: 01.0177641.00

Lab Number: L2429018

Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1932104-4 WG1932104-5 QC Sample: L2429018-01 Client ID: VDT-01_0-9IN												
Perfluorotridecanoic Acid (PFTrDA)	ND	1.97	1.88	95		1.94	98		40-150	3		30
Perfluorotetradecanoic Acid (PFTeDA)	ND	1.97	1.85	94		1.91	97		40-150	3		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	7.89	8.03	102		8.63	109		40-150	7		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	7.45	8.52	114		9.13	122		40-150	7		30
Perfluorododecanesulfonic Acid (PFDoS)	ND	1.91	1.80	94		1.98	103		40-150	10		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	7.37	8.17	111		8.85	120		40-150	8		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	7.45	9.32	125		9.98	133		40-150	7		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	1.97	2.08	105		2.35	119		40-150	12		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	1.97	1.97	100		2.21	112		40-150	11		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	19.7	20.4	103		23.4	118		40-150	14		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	19.7	19.8	100		21.0	106		40-150	6		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	3.94	3.87	98		4.16	105		40-150	7		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	3.94	3.86	98		4.13	104		40-150	7		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	3.51	3.36	96		3.74	106		40-150	11		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	3.94	3.28	83		3.58	91		40-150	9		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	9.86	8.12	82		8.60	87		40-150	6		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	49.3	37.1	75		43.1	87		40-150	15		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	49.3	48.8	99		52.7	107		40-150	8		30

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00
Lab Number: L2429018
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1932104-4 WG1932104-5 QC Sample: L2429018-01 Client ID: VDT-01_0-9IN

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	**201**	Q	**173**	Q	20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	**164**	Q	**154**	Q	20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	100		88		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	62		57		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	128		118		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	70		69		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	61		56		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	131		124		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	88		79		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	82		79		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	71		65		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	83		78		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	84		78		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	83		76		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	82		75		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	86		78		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	70		64		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	85		79		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	75		72		20-150
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	79		75		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	79		75		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	100		97		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	84		77		20-150

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE COUNTY FTA

Project Number: 01.0177641.00

Lab Number: L2429018

Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1932104-4 WG1932104-5 QC Sample: L2429018-01 Client ID: VDT-01_0-9IN												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	65		61		20-150

INORGANICS
&
MISCELLANEOUS

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00

Lab Number: L2429018
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2429018-01
Client ID: VDT-01_0-9IN
Sample Location: BARNSTABLE, MA

Date Collected: 05/20/24 09:10
Date Received: 05/24/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	90.4		%	0.100	0.100	1	-	05/28/24 07:52	121,2540G	KAR

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00
Lab Number: L2429018
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2429018-02
Client ID: VDT-02_5-6FT
Sample Location: BARNSTABLE, MA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/24 10:25
Date Received: 05/24/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	95.5		%	0.100	0.100	1	-	05/29/24 19:42	121,2540G	MEB

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00
Lab Number: L2429018
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2429018-03
Client ID: VDT-04_0-9IN
Sample Location: BARNSTABLE, MA
Sample Depth:
Matrix: Soil
Date Collected: 05/21/24 10:10
Date Received: 05/24/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	93.6		%	0.100	0.100	1	-	05/28/24 07:52	121,2540G	KAR

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00
Lab Number: L2429018
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2429018-04
Client ID: VDT-04_9-12FT
Sample Location: BARNSTABLE, MA
Sample Depth:
Matrix: Soil
Date Collected: 05/21/24 10:25
Date Received: 05/24/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	93.9		%	0.100	0.100	1	-	05/28/24 07:52	121,2540G	KAR

Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE COUNTY FTA

Project Number: 01.0177641.00

Lab Number: L2429018

Report Date: 08/13/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01,03-04 QC Batch ID: WG1926298-1 QC Sample: L2428811-02 Client ID: DUP Sample						
Solids, Total	76.7	77.2	%	1		10
General Chemistry - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1927222-1 QC Sample: L2429497-01 Client ID: DUP Sample						
Solids, Total	85.0	85.0	%	0		10

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00

Lab Number: L2429018
Report Date: 08/13/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2429018-01A	Plastic 8oz unpreserved	A	NA		2.1	Y	Absent		A2-1633-DRAFT(90)
L2429018-01B	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		A2-TS(7)
L2429018-02A	Plastic 8oz unpreserved	A	NA		2.1	Y	Absent		A2-TS(7),A2-1633-DRAFT(90)
L2429018-03A	Plastic 8oz unpreserved	A	NA		2.1	Y	Absent		A2-1633-DRAFT(90)
L2429018-03B	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		A2-TS(7)
L2429018-04A	Plastic 8oz unpreserved	A	NA		2.1	Y	Absent		A2-1633-DRAFT(90)
L2429018-04B	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		A2-TS(7)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00

Lab Number: L2429018
Report Date: 08/13/24

PFAS PARAMETER SUMMARY

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

Project Name: BARNSTABLE COUNTY FTA
Project Number: 01.0177641.00
Lab Number: L2429018
Report Date: 08/13/24

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:	BARNSTABLE COUNTY FTA	**Lab Number:**	L2429018
Project Number:	01.0177641.00	**Report Date:**	08/13/24

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

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

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

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

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

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

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

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

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE COUNTY FTA	**Lab Number:**	L2429018
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE COUNTY FTA	**Lab Number:**	L2429018
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Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

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

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

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration 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:	BARNSTABLE COUNTY FTA	**Lab Number:**	L2429018
Project Number:	01.0177641.00	**Report Date:**	08/13/24

REFERENCES

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

144 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. Draft EPA Method 1633, EPA Document 821-D-22-001, June 2022.

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

Mansfield Facility
SM 2540D: TSS.
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.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

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

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

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 5/24/24

ALPHA Job #: L2429018

Client Information

Client: GZA GeoEnvironmental, Inc.
Address: 249 Vanderbilt Avenue, Norwood, MA 02062
Phone: 781-589-3866
Email: Jennifer.McKechnie@gza.com; Flora.Su@gza.com

Additional Project Information:

Project Information

Project Name: Barnstable County FTA
Project Location: Barnstable, MA
Project #: 01.0177641.00
Project Manager: Jenn McKechnie
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☒ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	PFAS: EPA 1633	Total Solids	Sample Comments	TOTAL # BOTTLES
29018-01	VDT-Ø1_0-9in	05/20/24	09:10	Soil	FKS	X	X		2
-02	VDT-Ø2_5-6ft①	05/20/24	10:25	Soil	FKS	X	X	① Insufficient sample volume to fill 2 jars. Please run sample if sufficient volume for analysis.	1
-03	VDT-Ø4_0-9in	05/21/24	10:10	Soil	FKS	X	X		2
-04	VDT-Ø4_9-12ft	05/21/24	10:25	Soil	FKS	X	X		2
Container Type						P	P		
Preservative						A	A		

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO
Filtration: ☐ Field ☐ Lab to do
Preservation: ☐ Lab to do

Container Type: P= Plastic, A= Amber glass, V= Vial, G= Glass, B= Bacteria cup, C= Cube, O= Other, E= Encore, D= BOD Bottle

Preservative: A= None, B= HCl, C= HNO_3, D= H_2SO_4, E= NaOH, F= MeOH, G= $NaHSO_4$, H = $Na_2S_2O_3$, I= Ascorbic Acid, J = NH_4Cl, K= Zn Acetate, O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Flora Su GZA sample receiving room fridge	05/23/2024 12:15	GZA sample receiving room fridge	05/23/24 12:15
[illegible]	5/24/24 1930	[illegible]	5/24/24 1710

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.
FORM NO: 01-01 (rev. 12-Mar-2012)

Rec'd in lab 5/24/24 21:40 5/24/24 2145 AAL

Appendix F – Sampling Notification Letters

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GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION MANAGEMENT

249 Vanderbilt Avenue
Norwood, MA 02062
T: 781.278.3700
F: 781.278.5701
F: 781.278.5702
www.gza.com

Transmittal of Analytical Results Pursuant to 310 CMR 40.1403 of
the Massachusetts Contingency Plan

July 18, 2024
GZA File No. 01.0177641.00

Barnstable Fire District
PO Box 546
Barnstable, Massachusetts 02630

Re: Results of Sample Analysis
155 South Flint Rock Road
Barnstable, Massachusetts
Release Tracking Number (RTN) 4-26179

To Whom It May Concern:

As required by the Massachusetts regulations where samples were collected as part of a Massachusetts Contingency Plan (MCP) response action, GZA is providing the results of environmental analysis of samples collected on Barnstable Fire District-owned land. These notice requirements are contained in the MCP at 310 CMR 40.1403(10). The groundwater laboratory data report excerpts are attached to this letter.

Please note that public involvement opportunities are available under 310 CMR 40.1403(9) and 40.1404. For more information about the public involvement regulations that require this notice and a description of such public involvement activities available under the MCP, see the following internet address: http://www.mass.gov/eea/agencies/massdep/cleanup/sites/public-involvement.html.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

David E. Leone, LSP
Principal

John R. Paquin
Principal-in-Charge/Project Coordinator

cc: Paul Ruszala, Barnstable County (via email)

Attachments: Transmittal Form BWSC123
Site Plan
Laboratory Report Excerpts

\\GZANOR\Jobs\170,000-179,999\177641\177641-00.JEM\Data Transmittals\Data Transmittals to other property owners\Barnstable Fire District\Barnstable Fire District 2024-07.docx

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

4 - 26179

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: 155 South Flint Rock Road

City/Town: Barnstable Zip Code: 02630

B. This notice is being provided to the following party:

1. Name: Barnstable Fire District

2. Street Address: PO Box 546

City/Town: Barnstable Zip Code: 02630

C. This notice is being given to inform its recipient (the party listed in Section B):

☑ 1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.

☑ 2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.

☐ 3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: 223 Breed's Hill Road

City/Town: Barnstable Zip Code: 02630

2. MCP phase of work during which the sampling will be/has been conducted:

☐ Immediate Response Action
☐ Release Abatement Measure
☐ Utility-related Abatement Measure
☐ Phase I Initial Site Investigation
☑ Phase II Comprehensive Site Assessment
☐ Phase III Feasibility Evaluation
☐ Phase IV Remedy Implementation Plan
☐ Phase V/Remedy Operation Status
☐ Post-Temporary Solution Operation, Maintenance and Monitoring
☐ Other _____ (specify)

3. Description of property where sampling will be/has been conducted:

☐ residential ☐ commercial ☐ industrial ☐ school/playground ☑ Other Undeveloped/Wooded (specify)

4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

Collection of groundwater samples from monitoring wells in Barnstable Fire District wooded land for PFAS.

E. Contact information related to the party providing this notice:

Contact Name: David E. Leone, LSP, GZA GeoEnvironmental, Inc.

Street Address: 249 Vanderbilt Avenue

City/Town: Norwood Zip Code: 02062

Telephone: (781) 278-5766 Email: davide.leone@gza.com

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

4 - 26179

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at http://www.mass.gov/eea/agencies/massdep/cleanup. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See http://public.dep.state.ma.us/SearchableSites2/Search.aspx to view site-specific files on-line or http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

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249 Vanderbilt Avenue
Norwood, MA 02062
T: 781.278.3700
F: 781.278.5701
F: 781.278.5702
www.gza.com

Transmittal of Analytical Results Pursuant to 310 CMR 40.1403 of
the Massachusetts Contingency Plan

September 4, 2024
GZA File No. 01.0177641.00

Barnstable Fire District
PO Box 546
Barnstable, Massachusetts 02630

Re: Revised Results of Sample Analysis
155 South Flint Rock Road
Barnstable, Massachusetts
Release Tracking Number (RTN) 4-26179

To Whom It May Concern:

In our letter dated July 18, 2024, GZA provided you with the results of environmental analysis of samples collected on Barnstable Fire District-owned land. After we provided the data, we were informed by our laboratory subcontractor that the analytical reports needed revision to include estimated PFAS values that were detected below laboratory reporting limits. GZA is providing you with the attached revised results.

Please note that public involvement opportunities are available under 310 CMR 40.1403(9) and 40.1404. For more information about the public involvement regulations that require this notice and a description of such public involvement activities available under the MCP, see the following internet address: http://www.mass.gov/eea/agencies/massdep/cleanup/sites/public-involvement.html.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

David E. Leone, LSP
Principal

John R. Paquin
Principal-in-Charge/Project Coordinator

cc: Paul Ruszala, Barnstable County (via email)

Attachments: Transmittal Form BWSC123
Site Plan
Laboratory Report Excerpts

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Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

4 - 26179

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: 155 South Flint Rock Road

City/Town: Barnstable Zip Code: 02630

B. This notice is being provided to the following party:

1. Name: Barnstable Fire District

2. Street Address: PO Box 546

City/Town: Barnstable Zip Code: 02630

C. This notice is being given to inform its recipient (the party listed in Section B):

☑ 1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.

☑ 2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.

☐ 3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: 223 Breed's Hill Road

City/Town: Barnstable Zip Code: 02630

2. MCP phase of work during which the sampling will be/has been conducted:

☐ Immediate Response Action
☐ Release Abatement Measure
☐ Utility-related Abatement Measure
☐ Phase I Initial Site Investigation
☑ Phase II Comprehensive Site Assessment
☐ Phase III Feasibility Evaluation
☐ Phase IV Remedy Implementation Plan
☐ Phase V/Remedy Operation Status
☐ Post-Temporary Solution Operation, Maintenance and Monitoring
☐ Other _____ (specify)

3. Description of property where sampling will be/has been conducted:

☐ residential ☐ commercial ☐ industrial ☐ school/playground ☑ Other Undeveloped/Wooded (specify)

4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

Collection of groundwater samples from monitoring wells in Barnstable Fire District wooded land for PFAS.

E. Contact information related to the party providing this notice:

Contact Name: David E. Leone, LSP, GZA GeoEnvironmental, Inc.

Street Address: 249 Vanderbilt Avenue

City/Town: Norwood Zip Code: 02062

Telephone: (781) 278-5766 Email: davide.leone@gza.com

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

4 - 26179

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at http://www.mass.gov/eea/agencies/massdep/cleanup. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See http://public.dep.state.ma.us/SearchableSites2/Search.aspx to view site-specific files on-line or http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

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249 Vanderbilt Avenue
Norwood, MA 02062
T: 781.278.3700
F: 781.278.5701
F: 781.278.5702
www.gza.com

Transmittal of Analytical Results Pursuant to 310 CMR 40.1403 of
the Massachusetts Contingency Plan

July 18, 2024
GZA File No. 01.0177641.00

Mr. Brian Smith
Commonwealth Electric
d/b/a Eversource Energy
484 Willow Street
West Yarmouth, Massachusetts 02673

Re: Results of Sample Analysis
155 South Flint Rock Road
Barnstable, Massachusetts
Release Tracking Number (RTN) 4-26179

To Whom It May Concern:

As required by the Massachusetts regulations where samples were collected as part of a Massachusetts Contingency Plan (MCP) response action, GZA is providing the results of environmental analysis of samples collected on Commonwealth Electric-owned land. These notice requirements are contained in the MCP at 310 CMR 40.1403(10). The groundwater laboratory data report excerpts are attached to this letter.

Please note that public involvement opportunities are available under 310 CMR 40.1403(9) and 40.1404. For more information about the public involvement regulations that require this notice and a description of such public involvement activities available under the MCP, see the following internet address: http://www.mass.gov/eea/agencies/massdep/cleanup/sites/public-involvement.html.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

David E. Leone, LSP
Principal

John R. Paquin
Principal-in-Charge/Project Coordinator

cc: Paul Ruszala, Barnstable County (via email)

Attachments: Transmittal Form BWSC123
Site Plan
Laboratory Report Excerpts

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Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

4 - 26179

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: 155 South Flint Rock Road

City/Town: Barnstable Zip Code: 02630

B. This notice is being provided to the following party:

1. Name: Commonwealth Electric

2. Street Address: 484 Willow Street, West Yarmouth, MA 02673

City/Town: Boston Zip Code: 02202

C. This notice is being given to inform its recipient (the party listed in Section B):

☑ 1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.

☑ 2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.

☐ 3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: 0 Mary Dunn Road & other properties associated w/ the Site

City/Town: Hyannis Zip Code: 02601

2. MCP phase of work during which the sampling will be/has been conducted:

☐ Immediate Response Action
☐ Release Abatement Measure
☐ Utility-related Abatement Measure
☐ Phase I Initial Site Investigation
☑ Phase II Comprehensive Site Assessment
☐ Phase III Feasibility Evaluation
☐ Phase IV Remedy Implementation Plan
☐ Phase V/Remedy Operation Status
☐ Post-Temporary Solution Operation, Maintenance and Monitoring
☐ Other _____ (specify)

3. Description of property where sampling will be/has been conducted:

☐ residential ☐ commercial ☐ industrial ☐ school/playground ☑ Other Undeveloped/Wooded (specify)

4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

Collection of groundwater samples from monitoring wells for PFAS.

E. Contact information related to the party providing this notice:

Contact Name: David E. Leone, LSP, GZA GeoEnvironmental, Inc.
Street Address: 249 Vanderbilt Avenue
City/Town: Norwood Zip Code: 02062
Telephone: (781) 278-5766 Email: davide.leone@gza.com

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

4 - 26179

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

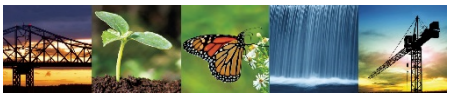
When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at http://www.mass.gov/eea/agencies/massdep/cleanup. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See http://public.dep.state.ma.us/SearchableSites2/Search.aspx to view site-specific files on-line or http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.



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www.gza.com

Transmittal of Analytical Results Pursuant to 310 CMR 40.1403 of
the Massachusetts Contingency Plan

September 4, 2024
GZA File No. 01.0177641.00

Ms. Saskia Oosting
Commonwealth Electric
d/b/a Eversource Energy
247 Station Drive SE270
Westwood, Massachusetts 02090

Re: Results of Sample Analysis
155 South Flint Rock Road
Barnstable, Massachusetts
Release Tracking Number (RTN) 4-26179

To Whom It May Concern:

In our letter dated July 18, 2024, GZA provided you with the results of environmental analysis of samples collected on Commonwealth Electric-owned land. After we provided the data, we were informed by our laboratory subcontractor that the analytical reports needed revision to include estimated PFAS values that were detected below laboratory reporting limits. GZA is providing you with the attached revised results.

Please note that public involvement opportunities are available under 310 CMR 40.1403(9) and 40.1404. For more information about the public involvement regulations that require this notice and a description of such public involvement activities available under the MCP, see the following internet address: http://www.mass.gov/eea/agencies/massdep/cleanup/sites/public-involvement.html.
Very truly yours,

GZA GEOENVIRONMENTAL, INC.

David E. Leone, LSP
Principal

John R. Paquin
Principal-in-Charge/Project Coordinator

cc: Paul Ruszala, Barnstable County (via email)

Attachments: Transmittal Form BWSC123
Site Plan
Laboratory Report Excerpts

\\GZANOR\Jobs\170,000-179,999\177641\177641-00.JEM\Data Transmittals\Data Transmittals to other property owners\Commonwealth Electric\Commonwealth Electric 2024-09 revised.docx

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

4 - 26179

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: 155 South Flint Rock Road

City/Town: Barnstable Zip Code: 02630

B. This notice is being provided to the following party:

1. Name: Commonwealth Electric

2. Street Address: 484 Willow Street, West Yarmouth, MA 02673

City/Town: Boston Zip Code: 02202

C. This notice is being given to inform its recipient (the party listed in Section B):

☑ 1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.

☑ 2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.

☐ 3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: 0 Mary Dunn Road & other properties associated w/ the Site

City/Town: Hyannis Zip Code: 02601

2. MCP phase of work during which the sampling will be/has been conducted:

☐ Immediate Response Action
☐ Release Abatement Measure
☐ Utility-related Abatement Measure
☐ Phase I Initial Site Investigation
☑ Phase II Comprehensive Site Assessment
☐ Phase III Feasibility Evaluation
☐ Phase IV Remedy Implementation Plan
☐ Phase V/Remedy Operation Status
☐ Post-Temporary Solution Operation, Maintenance and Monitoring
☐ Other _____ (specify)

3. Description of property where sampling will be/has been conducted:

☐ residential ☐ commercial ☐ industrial ☐ school/playground ☑ Other Undeveloped/Wooded (specify)

4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

Collection of groundwater samples from monitoring wells for PFAS.

E. Contact information related to the party providing this notice:

Contact Name: David E. Leone, LSP, GZA GeoEnvironmental, Inc.
Street Address: 249 Vanderbilt Avenue
City/Town: Norwood Zip Code: 02062
Telephone: (781) 278-5766 Email: davide.leone@gza.com

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

4 - 26179

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at http://www.mass.gov/eea/agencies/massdep/cleanup. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See http://public.dep.state.ma.us/SearchableSites2/Search.aspx to view site-specific files on-line or http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

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Transmittal of Analytical Results Pursuant to 310 CMR 40.1403 of
the Massachusetts Contingency Plan

July 18, 2024
GZA File No. 01.0177641.00

Commonwealth of Massachusetts
Division of Fish and Wildlife
100 Cambridge Street
Boston, Massachusetts 02202

Re: Results of Sample Analysis
155 South Flint Rock Road
Barnstable, Massachusetts
Release Tracking Number (RTN) 4-26179

To Whom It May Concern:

As required by the Massachusetts regulations where samples were collected as part of a Massachusetts Contingency Plan (MCP) response action, GZA is providing the results of environmental analysis of samples collected on Commonwealth of Massachusetts-owned land. These notice requirements are contained in the MCP at 310 CMR 40.1403(10). The groundwater laboratory data report excerpts are attached to this letter.

Please note that public involvement opportunities are available under 310 CMR 40.1403(9) and 40.1404. For more information about the public involvement regulations that require this notice and a description of such public involvement activities available under the MCP, see the following internet address: http://www.mass.gov/eea/agencies/massdep/cleanup/sites/public-involvement.html.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

David E. Leone, LSP
Principal

John R. Paquin
Principal-in-Charge/Project Coordinator

cc: Paul Ruszala, Barnstable County (via email)

Attachments: Transmittal Form BWSC123
Site Plan
Laboratory Report Excerpts

\\GZANOR\Jobs\170,000-179,999\177641\177641-00.JEM\Data Transmittals\Data Transmittals to other property owners\Commonwealth of Massachusetts\Commonwealth of MA 2024-07.docx

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

4 - 26179

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: 155 South Flint Rock Road

City/Town: Barnstable Zip Code: 02630

B. This notice is being provided to the following party:

1. Name: Commonwealth of Mass; Div. of Fish and Wildlife

2. Street Address: 100 Cambridge Street

City/Town: Boston Zip Code: 02202

C. This notice is being given to inform its recipient (the party listed in Section B):

☑ 1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.

☑ 2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.

☐ 3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: 0 Mary Dunn Road & other properties associated w/ the Site

City/Town: Hyannis Zip Code: 02601

2. MCP phase of work during which the sampling will be/has been conducted:

☐ Immediate Response Action
☐ Release Abatement Measure
☐ Utility-related Abatement Measure
☐ Phase I Initial Site Investigation
☑ Phase II Comprehensive Site Assessment
☐ Phase III Feasibility Evaluation
☐ Phase IV Remedy Implementation Plan
☐ Phase V/Remedy Operation Status
☐ Post-Temporary Solution Operation, Maintenance and Monitoring
☐ Other _____ (specify)

3. Description of property where sampling will be/has been conducted:

☐ residential ☐ commercial ☐ industrial ☐ school/playground ☑ Other Undeveloped/Wooded (specify)

4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

Collection of groundwater samples from monitoring wells in Commonwealth of Massachusetts (Division of Fish and Wildlife) wooded land for PFAS.

E. Contact information related to the party providing this notice:

Contact Name: David E. Leone, LSP, GZA GeoEnvironmental, Inc.

Street Address: 249 Vanderbilt Avenue

City/Town: Norwood Zip Code: 02062

Telephone: (781) 278-5766 Email: davide.leone@gza.com

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

4 - 26179

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at http://www.mass.gov/eea/agencies/massdep/cleanup. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See http://public.dep.state.ma.us/SearchableSites2/Search.aspx to view site-specific files on-line or http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

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Transmittal of Analytical Results Pursuant to 310 CMR 40.1403 of
the Massachusetts Contingency Plan

September 4, 2024
GZA File No. 01.0177641.00

Commonwealth of Massachusetts
Division of Fish and Wildlife
100 Cambridge Street
Boston, Massachusetts 02202

Re: Results of Sample Analysis
155 South Flint Rock Road
Barnstable, Massachusetts
Release Tracking Number (RTN) 4-26179

To Whom It May Concern:

In our letter dated July 18, 2024, GZA provided you with the results of environmental analysis of samples collected on Commonwealth of Massachusetts-owned land. After we provided the data, we were informed by our laboratory subcontractor that the analytical reports needed revision to include estimated PFAS values that were detected below laboratory reporting limits. GZA is providing you with the attached revised results.

Please note that public involvement opportunities are available under 310 CMR 40.1403(9) and 40.1404. For more information about the public involvement regulations that require this notice and a description of such public involvement activities available under the MCP, see the following internet address: http://www.mass.gov/eea/agencies/massdep/cleanup/sites/public-involvement.html.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

David E. Leone, LSP
Principal

John R. Paquin
Principal-in-Charge/Project Coordinator

cc: Paul Ruszala, Barnstable County (via email)

Attachments: Transmittal Form BWSC123
Site Plan
Laboratory Report Excerpts

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Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

4 - 26179

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: 155 South Flint Rock Road

City/Town: Barnstable Zip Code: 02630

B. This notice is being provided to the following party:

1. Name: Commonwealth of Mass; Div. of Fish and Wildlife

2. Street Address: 100 Cambridge Street

City/Town: Boston Zip Code: 02202

C. This notice is being given to inform its recipient (the party listed in Section B):

☑ 1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.

☑ 2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.

☐ 3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: 0 Mary Dunn Road & other properties associated w/ the Site

City/Town: Hyannis Zip Code: 02601

2. MCP phase of work during which the sampling will be/has been conducted:

☐ Immediate Response Action
☐ Release Abatement Measure
☐ Utility-related Abatement Measure
☐ Phase I Initial Site Investigation
☑ Phase II Comprehensive Site Assessment
☐ Phase III Feasibility Evaluation
☐ Phase IV Remedy Implementation Plan
☐ Phase V/Remedy Operation Status
☐ Post-Temporary Solution Operation, Maintenance and Monitoring
☐ Other _____ (specify)

3. Description of property where sampling will be/has been conducted:

☐ residential ☐ commercial ☐ industrial ☐ school/playground ☑ Other Undeveloped/Wooded (specify)

4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

Collection of groundwater samples from monitoring wells in Commonwealth of Massachusetts (Division of Fish and Wildlife) wooded land for PFAS.

E. Contact information related to the party providing this notice:

Contact Name: David E. Leone, LSP, GZA GeoEnvironmental, Inc.

Street Address: 249 Vanderbilt Avenue

City/Town: Norwood Zip Code: 02062

Telephone: (781) 278-5766 Email: davide.leone@gza.com

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

4 - 26179

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at http://www.mass.gov/eea/agencies/massdep/cleanup. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See http://public.dep.state.ma.us/SearchableSites2/Search.aspx to view site-specific files on-line or http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

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Transmittal of Analytical Results Pursuant to 310 CMR 40.1403 of
the Massachusetts Contingency Plan

June 17, 2024
GZA File No. 01.0177641.00

Mr. Daniel Santos
Barnstable Department of Public Works
382 Falmouth Road
Hyannis, Massachusetts 02601

Re: Results of Sample Analyses
155 South Flint Rock Road
Barnstable, Massachusetts
Release Tracking Number (RTN) 4-26179

Mr. Santos:

It was nice to meet you on June 6, 2024. As we discussed, and as required by the Massachusetts regulations, GZA is providing the results of environmental sample analyses to you as the representative of the Town-owned land where samples were collected as part of a response action. These notice requirements are contained in the Massachusetts Contingency Plan (MCP) at 310 CMR 40.1403(10). The Massachusetts Department of Environmental Protection (MassDEP) recently completed borings and well installations along South Flint Rock Road as part of a Site Inspection under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). GZA was on-site to observe the borings and collected soil samples from three select locations, VDT-01, VDT-02, and VDT-04 as discussed in GZA's email dated May 13, 2024, and shown on the attached Site Plan (as prepared by others). The soil analytical results have been received and the laboratory data report is attached to this letter. We have enclosed a copy of the MassDEP transmittal form (BWSC 123) with the data.

Please note that public involvement opportunities are available under 310 CMR 40.1403(9) and 40.1404. For more information about the public involvement regulations that require this notice and a description of such public involvement activities available under the MCP, see the following internet address: http://www.mass.gov/eea/agencies/massdep/cleanup/sites/public-involvement.html.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

David E. Leone, LSP
Principal

John R. Paquin
Associate Principal

cc: Paul Ruszala, Barnstable County (via email)

Attachments: Transmittal Form BWSC123
Site Plan
Laboratory Report L2429018

\\GZANOR\Jobs\170,000-179,999\177641\177641-00.JEM\Data Transmittals\Town of Barnstable\Town of Barnstable 2024-06.docx

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

[ ] - [ ]

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: 155 South Flint Rock Road

City/Town: Barnstable Zip Code: 02630

B. This notice is being provided to the following party:

1. Name: Town of Barnstable

2. Street Address: 367 Main Street

City/Town: Hyannis Zip Code: 02601

C. This notice is being given to inform its recipient (the party listed in Section B):

☑ 1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.

☑ 2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.

☑ 3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: 0 South Flint Rock Rd & other properties associated w/ the Site

City/Town: Barnstable & Hyannis Zip Code: 02630 & 02601

2. MCP phase of work during which the sampling will be/has been conducted:

☐ Immediate Response Action
☐ Release Abatement Measure
☐ Utility-related Abatement Measure
☐ Phase I Initial Site Investigation
☑ Phase II Comprehensive Site Assessment
☐ Phase III Feasibility Evaluation
☐ Phase IV Remedy Implementation Plan
☐ Phase V/Remedy Operation Status
☐ Post-Temporary Solution Operation, Maintenance and Monitoring
☐ Other _____ (specify)

3. Description of property where sampling will be/has been conducted:

☐ residential ☐ commercial ☐ industrial ☐ school/playground ☑ Other Undeveloped/Wooded (specify)

4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

Collection of soil samples from borings completed along South Flint Rock Road.

E. Contact information related to the party providing this notice:

Contact Name: David E. Leone, LSP, GZA GeoEnvironmental, Inc.

Street Address: 249 Vanderbilt Avenue

City/Town: Norwood Zip Code: 02062

Telephone: (781) 278-5766 Email: davide.leone@gza.com

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number
[ ] - [ ]

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at http://www.mass.gov/eea/agencies/massdep/cleanup. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See http://public.dep.state.ma.us/SearchableSites2/Search.aspx to view site-specific files on-line or http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

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GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION MANAGEMENT

249 Vanderbilt Avenue
Norwood, MA 02062
T: 781.278.3700
F: 781.278.5701
F: 781.278.5702
www.gza.com

Transmittal of Analytical Results Pursuant to 310 CMR 40.1403 of
the Massachusetts Contingency Plan

July 18, 2024
GZA File No. 01.0177641.00

Mr. Daniel Santos
Barnstable Department of Public Works
382 Falmouth Road
Hyannis, Massachusetts 02601

Re: Results of Sample Analysis
155 South Flint Rock Road
Barnstable, Massachusetts
Release Tracking Number (RTN) 4-26179

Mr. Santos:

As required by the Massachusetts regulations where samples were collected as part of a Massachusetts Contingency Plan (MCP) response action, GZA is providing the results of environmental analysis of samples collected on Town-owned land. These notice requirements are contained in the MCP at 310 CMR 40.1403(10). The groundwater laboratory data report excerpts are attached to this letter.

Please note that public involvement opportunities are available under 310 CMR 40.1403(9) and 40.1404. For more information about the public involvement regulations that require this notice and a description of such public involvement activities available under the MCP, see the following internet address: http://www.mass.gov/eea/agencies/massdep/cleanup/sites/public-involvement.html.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

David E. Leone, LSP
Principal

John R. Paquin
Principal-in-Charge/Project Coordinator

cc: Paul Ruszala, Barnstable County (via email)

Attachments: Transmittal Form BWSC123
Site Plan
Laboratory Report Excerpts

\\GZANOR\Jobs\170,000-179,999\177641\177641-00.JEM\Data Transmittals\Data Transmittals to other property owners\Town of Barnstable\June 2024 GW\Town of Barnstable 2024-07.docx

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

[ ] - [ ]

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: 155 South Flint Rock Road

City/Town: Barnstable Zip Code: 02630

B. This notice is being provided to the following party:

1. Name: Town of Barnstable
2. Street Address: 367 Main Street

City/Town: Hyannis Zip Code: 02601

C. This notice is being given to inform its recipient (the party listed in Section B):

[✓] 1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.

[✓] 2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.

[ ] 3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: 0 South Flint Rock Rd & other properties associated w/ the Site

City/Town: Barnstable & Hyannis Zip Code: 02630 & 0260

2. MCP phase of work during which the sampling will be/has been conducted:

- [ ] Immediate Response Action
- [ ] Release Abatement Measure
- [ ] Utility-related Abatement Measure
- [ ] Phase I Initial Site Investigation
- [✓] Phase II Comprehensive Site Assessment
- [ ] Phase III Feasibility Evaluation
- [ ] Phase IV Remedy Implementation Plan
- [ ] Phase V/Remedy Operation Status
- [ ] Post-Temporary Solution Operation, Maintenance and Monitoring
- [ ] Other _____ (specify)

3. Description of property where sampling will be/has been conducted:

[ ] residential [ ] commercial [ ] industrial [ ] school/playground [✓] Other Undeveloped/Wooded (specify)

4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

Collection of groundwater samples from monitoring wells in Town of Barnstable wooded land for PFAS.

E. Contact information related to the party providing this notice:

Contact Name: David E. Leone, LSP, GZA GeoEnvironmental, Inc.
Street Address: 249 Vanderbilt Avenue
City/Town: Norwood Zip Code: 02062
Telephone: (781) 278-5766 Email: davide.leone@gza.com

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number
[ ] - [ ]

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at http://www.mass.gov/eea/agencies/massdep/cleanup. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See http://public.dep.state.ma.us/SearchableSites2/Search.aspx to view site-specific files on-line or http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

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Transmittal of Analytical Results Pursuant to 310 CMR 40.1403 of
the Massachusetts Contingency Plan

September 4, 2024
GZA File No. 01.0177641.00

Mr. Daniel Santos
Barnstable Department of Public Works
382 Falmouth Road
Hyannis, Massachusetts 02601

Re: Results of Sample Analysis
155 South Flint Rock Road
Barnstable, Massachusetts
Release Tracking Number (RTN) 4-26179

Mr. Santos:

In our letter dated July 18, 2024, GZA provided you with the results of environmental analysis of samples collected on Town-owned land. After we provided the data, we were informed by our laboratory subcontractor that the analytical reports needed revision to include estimated PFAS values that were detected below laboratory reporting limits. GZA is providing you with the attached revised results.

Please note that public involvement opportunities are available under 310 CMR 40.1403(9) and 40.1404. For more information about the public involvement regulations that require this notice and a description of such public involvement activities available under the MCP, see the following internet address: http://www.mass.gov/eea/agencies/massdep/cleanup/sites/public-involvement.html.Very truly yours,

GZA GEOENVIRONMENTAL, INC.

David E. Leone, LSP
Principal

John R. Paquin
Principal-in-Charge/Project Coordinator

cc: Paul Ruszala, Barnstable County (via email)

Attachments: Transmittal Form BWSC123
Site Plan
Laboratory Report Excerpts

\\GZANOR\Jobs\170,000-179,999\177641\177641-00.JEM\Data Transmittals\Data Transmittals to other property owners\Town of Barnstable\June 2024 GW\Town of Barnstable 2024-09 revised.docx

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

[ ] - [ ]

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1. Street Address: 0 South Flint Rock Rd & other properties associated w/ the Site

City/Town: Barnstable & Hyannis Zip Code: 02630 & 0260

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4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

Collection of groundwater samples from monitoring wells in Town of Barnstable wooded land for PFAS.

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Contact Name: David E. Leone, LSP, GZA GeoEnvironmental, Inc.
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Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number
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NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

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This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

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Appendix G – Boring Logs

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Barnstable County
Former Municipal Fire Training Facility
155 S. Flint Rock Road
Hyannis, MA

BORING NO.: GZ-1D
SHEET: 1 of 2
PROJECT NO: 01.0177641.10
REVIEWED BY: DRS

Drilling Co.: Drilex Environmental, Inc.
Foreman: Jamie Hastings
Logged By: Kasey Corrado

Type of Rig: Truck Mounted
Rig Model: Mobile Drill B-57
Drilling Method: Drive and Wash

Boring Location: See Plan
Ground Surface Elev. (ft.): 41
Final Boring Depth (ft.): 71
Date Start - Finish: 7/8/2024 - 7/10/2024

H. Datum:
V. Datum: NAVD 88

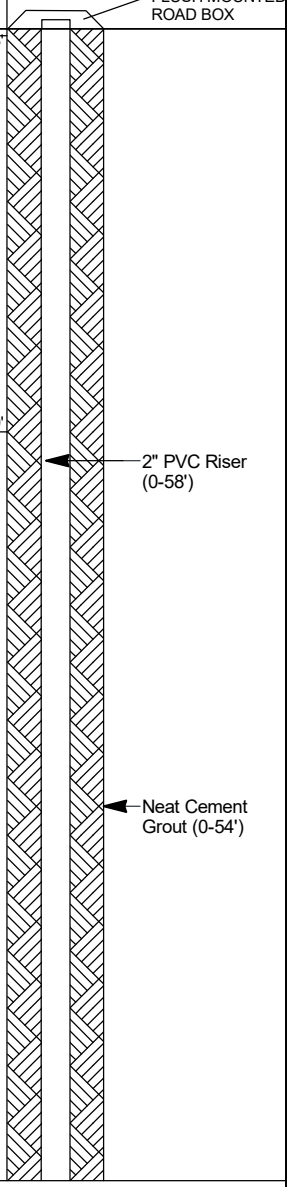
Auger/Casing Type: Steel Casing
I.D./O.D.: 4"
Hmr Weight (lb.): 300
Hmr Fall (in.): 24"
Other: Safety

Sampler Type: Split Spoon
I.D./O.D (in.): 1.375/2"
Sampler Hmr Wt: 140 lbs
Sampler Hmr Fall: 30"
Other:

Groundwater Depth (ft.)

Date	Time	Water Depth	Casing	Stab. Time
7/29/24	08:00	14.85	PVC	19 days

Depth (ft)	Casing Blows/ Core Rate Min/ft	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description Modified Burmister	Remark	Field Test Data
		S-1	0-2	24	16	15 13 5 8	18	S-1: 0-3" - Asphalt, 3-8". Dry, dark brown/black, fine to	1	0.6
		S-2	2-4	24	5	5 6 5 17	11	coarse SAND, little fine Gravel. 8-16" - Dry, light brown, fine to		1.5
5		S-3	4-6	24	19	2 2 3 2	5	medium SAND, trace Gravel, trace Silt.		0.6
		S-4	6-8	24	13	7 17 27 27	44	S-2: Dry, light brown, fine to medium SAND, trace Silt, trace Gravel.		0.7
		S-5	8-10	24	9	6 17 17 6	34	S-3: Dry, tan, fine SAND, little to some Silt, trace Gravel.		1.2
10		S-6	10-12	24	4	6 17 28 28	45	S-4: Dry, light brown/tan, fine SAND, some Silt, little Gravel.		0.7
		S-7	12-14	24	11	28 36 60 for 5"		S-5: 0-2" - Dry, light brown, fine SAND.		0.7
15		S-8	14-16	24	11	5 8 12	21	2-5" - Rock. 5-9" - Dry, tan, fine to medium Sand,	2	0.6
		S-9	16-18	24	0	9 11 10 11	22	trace Silt, trace Gravel. S-6: Dry, light brown, fine to medium		-
		S-10	18-20	24	0	11 7 7 8	16	SAND, trace Gravel, trace Silt. S-7: 0-5" - Dry, light brown, fine to		-
20		S-11	20-22	1	0	8 8 36/1"	R	medium SAND, trace Silt, trace Gravel.		-
		S-12	22-24	24	0	5 5 8 17	13	5-11" - Rock and fine to coarse Sand. S-8: Wet, brown, medium to coarse		-
25		S-13	24-26	24	0	7 8 8 8	16	SAND, some Gravel, little Silt. S-9: No recovery. Rock in tip of		-
		S-14	26-28	24	7	6 7 10 11	17	spoon. S-10: No recovery. Rock in tip of		0.2
		S-15	28-30	24	7	10 11 10 13	21	spoon. S-11: No recovery. Rock in tip of		0.6
30		S-16	30-32	24	0	8 8 9 7	17	spoon. S-12: No Recovery.		-
		S-17	32-34	24	0	5 7 7 10	14	S-13: No recovery. S-14: Wet, gray/light tan, medium		-
35		S-18	34-36	24	0	5 6 3 5	9	SAND, trace Silt, trace fine Gravel. S-15: Wet, gray/light tan, medium		-
		S-19	36-38	24	0	4 8 7 8	15	SAND, trace fine Gravel, trace Silt. S-16: No recovery. Rock in tip of		-
		S-20	38-40	24	2	5 5 7 7	12	spoon.		0.2
40								S-17: No recovery. Rock in tip of		



REMARKS

1. Field testing result represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil containers using an Ion Science Phocheck Tiger Organic Vapor Meter equipped with a photo-ionization detector (PID) and 10.6 V lamp. Results in parts per million by volume (ppmv). ND indicates not detected above instrument detection limit (<0.1 ppmv).
2. Borehole drilled to 14' below ground surface (bgs) using hollow-stem auger drilling methods. Borehole advanced to completion depth using drive and wash drilling methods.

See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.: GZ-1D

TEST BORING LOG

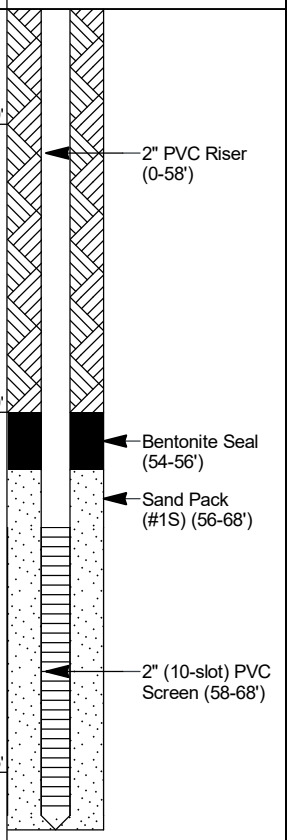
GZA GeoEnvironmental, Inc.
Engineers and Scientists

Barnstable County
Former Municipal Fire Training Facility
155 S. Flint Rock Road
Hyannis, MA

BORING NO.: GZ-1D
SHEET: 2 of 2
PROJECT NO: 01.0177641.10
REVIEWED BY: DRS

Depth (ft)	Casing Blows/ Core Rate Min/ft	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description Modified Burmister	Remark	Field Test Data
		S-21	40-42	24	4	7 17 11 11	28	spoon.		ND
								S-18: No recovery.		
		S-22	42-44	24	6	2 3 4 6	7	S-19: No recovery. Rock in tip of spoon.		0.3
45		S-23	44-46	24	6	2 3 5 8	8	S-20: ROCK (~2") and wet, gray/light tan, medium Sand, trace coarse Sand, trace fine Gravel, trace Silt.	1	0.2
		S-24	46-48	24	9	3 4 6 7	10	S-21: Wet, gray/light tan, medium SAND, little coarse Sand, trace fine Gravel, trace Silt.		0.9
		S-25	48-50	24	0	4 5 7 10	12			-
50		S-26	50-52	24	4	2 6 9 9	15	S-22: Wet, light gray/tan, medium SAND, trace fine Sand, trace Silt.		0.1
		S-27	52-54	24	6	2 3 4 17	7	S-23: Wet, light gray/tan, fine to medium SAND, little Silt.		0.3
55		S-28	54-56	24	7	1 5 4 7	9	S-24: Wet, light gray/tan, silty, fine SAND.		0.6
		S-29	56-58	24	2	3 3 5 6	8	S-25: No recovery.		0.7
		S-30	58-60	24	4	2 4 6 18	10	S-26: 0-3" - Wet, light gray/tan, medium SAND, trace coarse Sand, trace Silt.		1.2
60		S-31	60-62	24	8	3 4 5 7	9	3-4" - Rock.	2	0.7
		S-32	62-64	24	11	8 9 10 10	19	S-27: Wet, light tan, fine to medium SAND, trace Silt, trace coarse Sand.		0.8
65		S-33	64-66	24	7	44 46 50 46	96	S-28: 0-3" - Wet, light tan, fine to medium SAND.		0.7
		S-34	66-68	24	10	1 6 6 6	12	3-7" - Wet, light tan/brown, fine Sand, some Silt.		0.5
		S-35	68-70	24	0			S-29: Wet, light brown, fine to medium SAND, little Silt.		-
70		S-36	69-71	24	13	7 9 12 9	21	S-30: Wet, light brown, medium to coarse SAND, little Silt.		0.2
								S-31: Wet, light brown, fine to medium SAND, some Silt.		
								S-32: Wet, light tan/gray, fine SAND, some Silt, trace coarse Sand.		
75								S-33: Wet, light brown/tan, fine to medium SAND, some Silt.		
								S-34: 0-5" - Wet, brown, medium SAND.		
80								5-9" - Wet, brown clayey SILT.		
								9-10": Wet, gray, Silty Clay.		
								S-35: No recovery.		
								S-36: 0-12" - Wet, gray, clayey SILT, trace fine Sand.		
85								12-13" - Wet, gray CLAY.		
								Bottom of boring at 71 feet.		

Depth (ft)	Stratum Description	Elev. (ft)
44'	MEDIUM SAND	-3.0'
54'	FINE TO MEDIUM SAND	-13.0'
66.5'	SILTY SAND	-25.5'
70'	SILT AND CLAY	-29.0'
71'	CLAY	-30.0'



REMARKS

1. Field testing result represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil containers using an Ion Science Phocheck Tiger Organic Vapor Meter equipped with a photo-ionization detector (PID) and 10.6 V lamp. Results in parts per million by volume (ppmv). ND indicates not detected above instrument detection limit (<0.1 ppmv).
2. Borehole drilled to 14' below ground surface (bgs) using hollow-stem auger drilling methods. Borehole advanced to completion depth using drive and wash drilling methods.

See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.: GZ-1D

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Barnstable County
Former Municipal Fire Training Facility
155 S. Flint Rock Road
Hyannis, MA

BORING NO.: GZ-1I
SHEET: 1 of 2
PROJECT NO: 01.0177641.10
REVIEWED BY: DRS

Drilling Co.: Drilex Environmental, Inc.
Foreman: Adam Cloutier
Logged By: Kasey Corrado

Type of Rig: Truck Mounted
Rig Model: Mobile Drill B-57
Drilling Method: Drive and Wash

Boring Location: See Plan
Ground Surface Elev. (ft.): 41.6
Final Boring Depth (ft.): 48
Date Start - Finish: 7/10/2024 - 7/11/2024

H. Datum:
V. Datum: NAVD 88

Auger/Casing Type: Steel Casing
I.D./O.D.: 4"
Hmr Weight (lb.): 300
Hmr Fall (in.): 24
Other: Safety

Sampler Type: Split Spoon
I.D./O.D (in.): 1.375/2"
Sampler Hmr Wt: 140 lbs
Sampler Hmr Fall: 30"
Other:

Groundwater Depth (ft.)

Date	Time	Water Depth	Casing	Stab. Time
7/29/24	10:40	13.73	PVC	18 days

Depth (ft)	Casing Blows/ Core Rate Min/ft	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description Modified Burmister	Remark	Field Test Data
								No samples collected between 0 and 18' below ground surface (bgs).	1	
									2	
		S-1	18-20	24	6	11 8 7 4	15	S-1: Wet, light brown/tan, medium SAND, little Silt, trace fine Gravel.		0.6
		S-2	22-24	24	9	10 9 8 11	17	S-2: Wet, gray/tan, fine SAND, little Silt.		0.9
		S-3	34-36	24	8	3 3 4 3	7	S-3: Wet, gray/tan, medium SAND, trace Gravel, trace fine Sand, trace Silt.		0.4

Stratum Description

Depth (ft)	Elev. (ft)	Description
18'	23.6'	FINE TO MEDIUM SAND
24'	17.6'	
34'	7.6'	MEDIUM SAND
36'	5.6'	

Equipment Installed

FLUSH MOUNTED ROAD BOX
2" PVC Riser (0-38')
Neat Cement Grout (0-34')
Bentonite Seal (34-36.5')
Sand Pack (#1S) (36.5-48')

REMARKS

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Engineers and Scientists

Barnstable County
Former Municipal Fire Training Facility
155 S. Flint Rock Road
Hyannis, MA

BORING NO.: GZ-1I
SHEET: 2 of 2
PROJECT NO: 01.0177641.10
REVIEWED BY: DRS

Depth (ft)	Casing Blows/ Core Rate Min/ft	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft)	Stratum Description	Stratum Elev. (ft)	Equipment Installed
45									1					2" (10-slot) PVC Screen (38-48')
		S-4	46-48	24	9	3 5 11 13	16	S-4: Wet, gray/light tan, fine SAND, some Silt, trace fine Gravel.	2	0.6	46'		-4.4'	
											48'	SILTY SAND	-6.4'	
50								Bottom of boring at 48 feet.						
55														
60														
65														
70														
75														
80														
85														

REMARKS

1. Field testing result represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil containers using an Ion Science Phocheck Tiger Organic Vapor Meter equipped with a photo-ionization detector (PID) and 10.6 V lamp. Results in parts per million by volume (ppmv). ND indicates not detected above instrument detection limit (<0.1 ppmv).
2. Borehole drilled to 14' below ground surface (bgs) using hollow-stem auger drilling methods. Borehole advanced to completion depth using drive and wash drilling methods.

See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.: GZ-1I

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Barnstable County** **Former Municipal Fire Training Facility** **155 S. Flint Rock Road** **Hyannis, MA**	**BORING NO.:** GZ-1S **SHEET:** 1 of 1 **PROJECT NO:** 01.0177641.10 **REVIEWED BY:** DRS

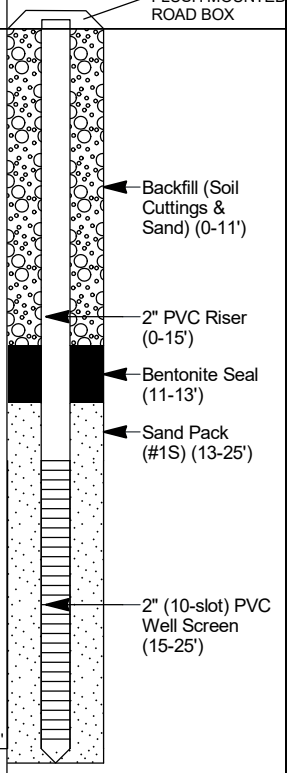
Drilling Co.: Drilex Environmental, Inc. **Foreman:** Adam Cloutier **Logged By:** Kasey Corrado	**Type of Rig:** Truck Mounted **Rig Model:** Mobile Drill B-57 **Drilling Method:** HSA	**Boring Location:** See Plan **Ground Surface Elev. (ft.):** 41.1 **Final Boring Depth (ft.):** 25 **Date Start - Finish:** 7/11/2024 - 7/11/2024	**H. Datum:** **V. Datum:** NAVD 88

Auger/Casing Type: Hollow Stem Auger **I.D./O.D.:** 4.25"/7.625" **Hmr Weight (lb.):** N/A **Hmr Fall (in.):** N/A **Other:** Safety	**Sampler Type:** Split Spoon **I.D./O.D (in.):** 1.375/2" **Sampler Hmr Wt:** 140 lbs **Sampler Hmr Fall:** 30" **Other:**	**Groundwater Depth (ft.)**

Date	Time	Water Depth	Casing	Stab. Time
7/31/24	10:30	13.65	PVC	20 days

Depth (ft)	Casing Blows/ Core Rate Min/ft	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft)	Stratum Description	Stratum Elev. (ft)
0								No Samples Collected	1				
25								Bottom of boring at 25 feet.			25'	FINE TO MEDIUM SAND	16.1'

Equipment Installed



REMARKS

1. Stratum description inferred from observations of GZ-PRB-1D and GZ-PRB-1I

See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.: GZ-1S

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Barnstable County Former Municipal Fire Training Facility 155 S. Flint Rock Road Hyannis, MA**	**BORING NO.: GZ-2D SHEET: 1 of 2 PROJECT NO: 01.0177641.10 REVIEWED BY: DRS**

Drilling Co.: Drilex Environmental, Inc. **Foreman:** Adam Cloutier **Logged By:** Kasey Corrado	**Type of Rig:** Truck Mounted **Rig Model:** Mobile Drill B-57 **Drilling Method:** Drive and Wash	**Boring Location:** See Plan **Ground Surface Elev. (ft.):** 40.9 **Final Boring Depth (ft.):** 70 **Date Start - Finish:** 7/16/2024 - 7/29/2024	**H. Datum:** **V. Datum:** NAVD 88

Auger/Casing Type: Steel Casing **I.D./O.D.:** 4" **Hmr Weight (lb.):** 300 **Hmr Fall (in.):** 24 **Other:** Safety	**Sampler Type:** Split Spoon **I.D./O.D (in.):** 1.375/2" **Sampler Hmr Wt:** 140 lbs **Sampler Hmr Fall:** 30" **Other:**	**Groundwater Depth (ft.)**

Date	Time	Water Depth	Casing	Stab. Time
7/31/24	08:25	13.51	PVC	2 days

Depth (ft)	Casing Blows/ Core Rate Min/ft	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft)	Stratum Description	Stratum Elev. (ft)	Equipment Installed
								No Samples collected between 0' to 12' below ground surface (bgs).	1					FLUSH MOUNTED ROAD BOX
		S-1	12-14	24	6	8 7 8 7	15	S-1: Wet, brown, medium SAND, trace coarse Sand, trace Silt.	2	0.0	12' 14'	MEDIUM SAND	28.9' 26.9'	2" PVC Riser (0-58') Neat Cement Grout (0-54')

REMARKS

1. Field testing result represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil containers using an Ion Science Phocheck Tiger Organic Vapor Meter equipped with a photo-ionization detector (PID) and 10.6 V lamp. Results in parts per million by volume (ppmv). ND indicates not detected above instrument detection limit (<0.1 ppmv).
2. Borehole drilled to 14' below ground surface (bgs) using hollow-stem auger drilling methods. Borehole advanced to completion depth using drive and wash drilling methods.

See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.: GZ-2D

TEST BORING LOG

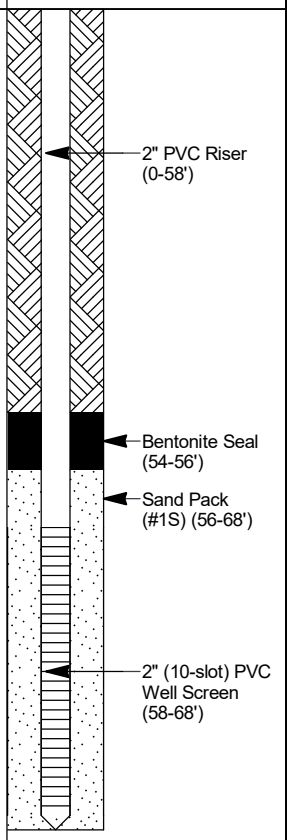
GZA GeoEnvironmental, Inc.
Engineers and Scientists

Barnstable County
Former Municipal Fire Training Facility
155 S. Flint Rock Road
Hyannis, MA

BORING NO.: GZ-2D
SHEET: 2 of 2
PROJECT NO: 01.0177641.10
REVIEWED BY: DRS

Depth (ft)	Casing Blows/ Core Rate Min/ft	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data
45										
50									1	
55									2	
60										
65		S-2	64-66	24	12	2 3 4 5	7	S-2: Wet, light brown/tan, fine to medium SAND, trace Silt.		0.4
		S-3	66-68	24	16	2 3 5 13	8	S-3: 0-12" - Wet, tan, fine to medium SAND, trace Silt. 12-16" - Wet, brown,		0.1
		S-4	68-70	24	24	3 6 11 14	17	Silty CLAY, trace fine Sand.		0.1
70								S-4: 0-3" - Wet, brown Silty CLAY. 3-24" 0 Wet, stiff, gray CLAY.		
								Bottom of boring at 70 feet.		
75										
80										
85										

Depth (ft)	Stratum Description	Elev. (ft)



Equipment Installed

REMARKS

1. Field testing result represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil containers using an Ion Science Phocheck Tiger Organic Vapor Meter equipped with a photo-ionization detector (PID) and 10.6 V lamp. Results in parts per million by volume (ppmv). ND indicates not detected above instrument detection limit (<0.1 ppmv).
2. Borehole drilled to 14' below ground surface (bgs) using hollow-stem auger drilling methods. Borehole advanced to completion depth using drive and wash drilling methods.

See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.: GZ-2D

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Barnstable County
Former Municipal Fire Training Facility
155 S. Flint Rock Road
Hyannis, MA

BORING NO.: GZ-3D
SHEET: 1 of 2
PROJECT NO: 01.0177641.10
REVIEWED BY: DRS

Drilling Co.: Drilex Environmental, Inc.	**Type of Rig:** Truck Mounted	**Boring Location:** See Plan	**H. Datum:**
Foreman: Adam Cloutier	**Rig Model:** Mobile Drill B-57	**Ground Surface Elev. (ft.):** 41	**V. Datum:** NAVD 88
Logged By: Kasey Corrado	**Drilling Method:** Drive and Wash	**Final Boring Depth (ft.):** 88	
		Date Start - Finish: 7/11/2024 - 7/16/2024	

Auger/Casing Type: Steel Casing
I.D./O.D.: 4"
Hmr Weight (lb.): 300
Hmr Fall (in.): 24"
Other: Safety

Sampler Type: Split Spoon
I.D./O.D (in.): 1.375/2"
Sampler Hmr Wt: 140 lbs
Sampler Hmr Fall: 30"
Other:

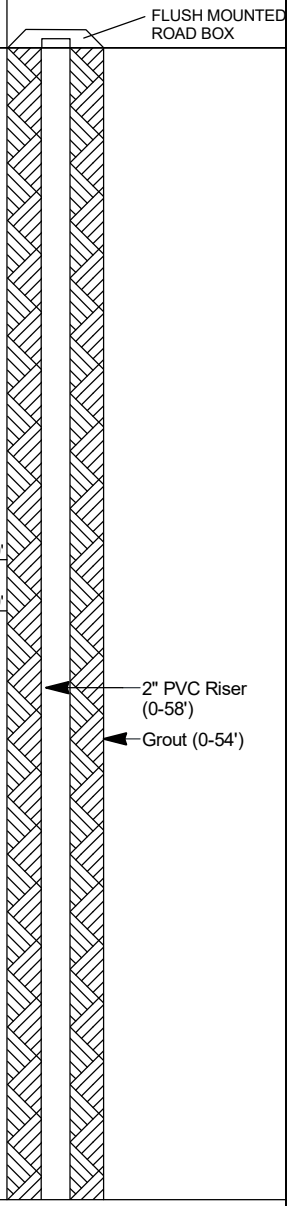
Groundwater Depth (ft.)

Date	Time	Water Depth	Casing	Stab. Time
7/31/24	08:20	12.95	PVC	15 days

Depth (ft)	Casing Blows/ Core Rate Min/ft	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description Modified Burmister	Remark	Field Test Data
5									1	
10										
15		S-1	14-16	24	0	11 9 11 12	20	S-1: No recovery.	2	-
20		S-2	20-22	24	8	5 5 5 8	10	S-2: Wet, gray, fine to medium SAND, little Silt, trace Gravel.		0.7
25										
30		S-3	30-32	24	0	5 4 5 7	9	S-3: No recovery.		-
35										
40		S-4	40-42	24	2	3 3 5 6	8	S-4: Wet, gray, fine SAND, little Silt, trace medium Sand.		0.1
45										

Stratum Description (Depth (ft) / Elev. (ft)):
20' — 21.0'
22' FINE TO MEDIUM SAND 19.0'

Equipment Installed



REMARKS

1. Field testing result represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil containers using an Ion Science Phocheck Tiger Organic Vapor Meter equipped with a photo-ionization detector (PID) and 10.6 V lamp. Results in parts per million by volume (ppmv). ND indicates not detected above instrument detection limit (<0.1 ppmv).
2. Borehole drilled to 14' below ground surface (bgs) using hollow-stem auger drilling methods. Borehole advanced to completion depth using drive and wash drilling methods.

See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.: GZ-3D

TEST BORING LOG

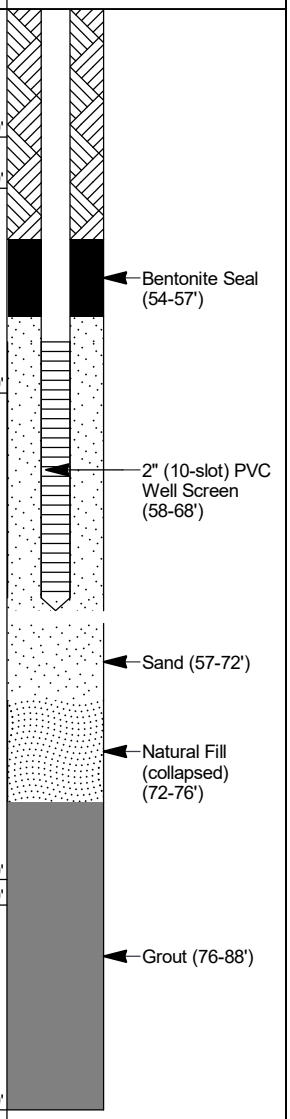
GZA GeoEnvironmental, Inc.
Engineers and Scientists

Barnstable County
Former Municipal Fire Training Facility
155 S. Flint Rock Road
Hyannis, MA

BORING NO.: GZ-3D
SHEET: 2 of 2
PROJECT NO: 01.0177641.10
REVIEWED BY: DRS

Depth (ft)	Casing Blows/ Core Rate Min/ft	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data
50		S-5	50-52	24	9	5 7 6 8	13	S-5: Wet, gray, fine to medium SAND, little Silt, trace Gravel.		0.4
55										
60		S-6	60-62	24	10	3 4 7 9	11	S-6: Wet, brown/light brown, medium SAND, trace fine Gravel, trace Silt.		0.8
		S-7	62-64	24	6	5 6 7 1	13	S-7: Wet, light brown, fine to medium SAND, some Silt.		0.1
65		S-8	64-66	24	7	3 4 4 6	8	S-8: Wet, light brown/tan, fine SAND, some Silt.	1	0.2
		S-9	66-68	24	11	1 2 2 5	4	S-9: Wet, light brown/tan, fine to medium SAND, some Silt.		0.5
		S-10	68-70	24	5	2 6 4 5	10	S-10: Wet light brown/brown, fine SAND, some Silt.		0.3
70		S-11	70-72	24	11	2 3 5 7	8	S-11: Wet, light brown/tan, silty fine SAND,		0.1
		S-12	72-74	24	17	3 3 4 6	7	S-12: Wet, light brown/tan, silty fine SAND,		0.0
75		S-13	74-76	24	18	2 4 5 10	9	S-13: Wet, light brown/tan, silty fine SAND.	2	0.1
		S-14	78-80	24	11	1 1 3 5	4	S-14: 0-7" - Wet, light brown/tan fine SAND and SILT. 7-11" - Wet, brown, Clayey Silt.	3	0.1
80		S-15	82-84	24	18	1 2 6 12	8	S-15: Wet, light brown/tan, fine SAND, some Silt.		0.2
		S-16	84-86	24	7	2 4 5 6	9	S-16: Wet, light brown/tan, fine SAND, some Silt.		0.1
85		S-17	86-88	24	9.5	2 2 3 6	5	S-17: Wet, light brown/tan, fine SAND, some Silt.		0.1
90								Bottom of boring at 88 feet.		
95										

Depth (ft)	Stratum Description	Elev. (ft)
50'		-9.0'
52'	FINE TO MEDIUM SAND	-11.0'
60'		-19.0'
	SILTY SAND	
79'		-38.0'
80'	CLAYEY SILT	-39.0'
	SILTY SAND	
88'		-47.0'



REMARKS

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2. Borehole drilled to 14' below ground surface (bgs) using hollow-stem auger drilling methods. Borehole advanced to completion depth using drive and wash drilling methods.
3. Grout placed between 76' and 88' and allowed to setup overnight prior to installation of monitoring well.

See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.: GZ-3D

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Barnstable County
Former Municipal Fire Training Facility
155 S. Flint Rock Road
Hyannis, MA

BORING NO.: GZ-3S
SHEET: 1 of 1
PROJECT NO: 01.0177641.10
REVIEWED BY: DRS

Drilling Co.: Drilex Environmental, Inc.
Foreman: Adam Cloutier
Logged By: Kasey Corrado

Type of Rig: Truck Mounted
Rig Model: Mobile Drill B-57
Drilling Method: HSA

Boring Location: See Plan
Ground Surface Elev. (ft.): 40.1
Final Boring Depth (ft.): 20
Date Start - Finish: 7/16/2024 - 7/16/2024

H. Datum:
V. Datum: NAVD 88

Auger/Casing Type: Hollow Stem Auger
I.D./O.D.: 4.25"/7.625"
Hmr Weight (lb.): N/A
Hmr Fall (in.): N/A
Other:

Sampler Type: Split Spoon
I.D./O.D (in.): 1.375/2"
Sampler Hmr Wt: 140 lbs
Sampler Hmr Fall: 30"
Other:

Groundwater Depth (ft.)

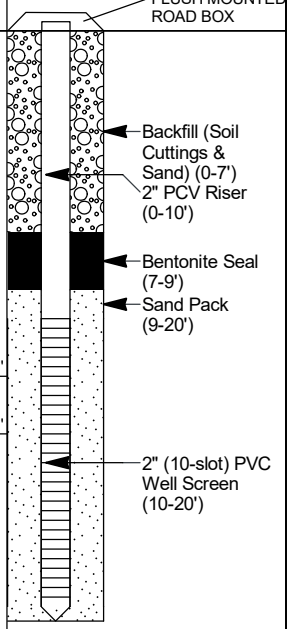
Date	Time	Water Depth	Casing	Stab. Time
7/31/24	10:25	12.79	PVC	15 days

Depth (ft)	Casing Blows/ Core Rate Min/ft	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description Modified Burmister	Remark	Field Test Data
0									1	
5										
10		S-1	12-14	24	10	4 10 15 21	25	S-1: Wet, brown, medium to coarse SAND, little Gravel, trace Silt.		NM
15										
20								Bottom of boring at 20 feet.		
25										
30										
35										
40										

Stratum Description

Depth (ft)	Elev. (ft)	Description
12'	28.1'	MEDIUM TO COARSE SAND
14'	26.1'	

Equipment Installed



REMARKS

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See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.: GZ-3S

Appendix H – Groundwater and Surface Water Laboratory Analytical Results

ANALYTICAL REPORT

Lab Number:	L2432894
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Jennifer McKechnie
Phone:	(781) 278-3864
Project Name:	BARNSTABLE
Project Number:	01.0177641.00
Report Date:	08/13/24

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0825), DoD (L2474), FL (E87814), IL (200081), IN (C-MA-04), KY (KY98046), LA (85084), ME (MA00030), MD (350), MI (9110), MN (025-999-495), NJ (MA015), NY (11627), NC (685), OR (MA-0262), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #525-23-107-88708A1), USFWS (Permit #A24920).

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

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432894
Report Date: 08/13/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2432894-01	FS1-A	WATER	155 S. FLINT ROCK ROAD	06/10/24 14:50	06/12/24
L2432894-02	FS1-B	WATER	155 S. FLINT ROCK ROAD	06/10/24 13:50	06/12/24
L2432894-03	FS1-C	WATER	155 S. FLINT ROCK ROAD	06/10/24 12:50	06/12/24
L2432894-04	MW-201	WATER	155 S. FLINT ROCK ROAD	06/10/24 11:10	06/12/24
L2432894-05	MW-302	WATER	155 S. FLINT ROCK ROAD	06/10/24 13:15	06/12/24
L2432894-06	MW-303	WATER	155 S. FLINT ROCK ROAD	06/10/24 15:45	06/12/24
L2432894-07	MW-304	WATER	155 S. FLINT ROCK ROAD	06/10/24 14:00	06/12/24
L2432894-08	MW-306	WATER	155 S. FLINT ROCK ROAD	06/10/24 12:40	06/12/24
L2432894-09	MW-310	WATER	155 S. FLINT ROCK ROAD	06/10/24 15:10	06/12/24
L2432894-10	MW-405	WATER	155 S. FLINT ROCK ROAD	06/10/24 18:10	06/12/24
L2432894-11	MW-406	WATER	155 S. FLINT ROCK ROAD	06/11/24 12:20	06/12/24
L2432894-12	MW-2	WATER	155 S. FLINT ROCK ROAD	06/11/24 14:45	06/12/24
L2432894-13	MW-10	WATER	155 S. FLINT ROCK ROAD	06/11/24 15:15	06/12/24
L2432894-14	MW-3S	WATER	155 S. FLINT ROCK ROAD	06/11/24 16:15	06/12/24
L2432894-15	MW-3I	WATER	155 S. FLINT ROCK ROAD	06/11/24 13:00	06/12/24
L2432894-16	MW-3D	WATER	155 S. FLINT ROCK ROAD	06/11/24 14:20	06/12/24
L2432894-17	PFW-3	WATER	155 S. FLINT ROCK ROAD	06/11/24 08:45	06/12/24

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

MADEP MCP Response Action Analytical Report Certification

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

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

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

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

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

Project Name:	BARNSTABLE	**Lab Number:**	L2432894
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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:	BARNSTABLE	**Lab Number:**	L2432894
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Case Narrative (continued)

Report Revision

August 13, 2024: At the client's request, all non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Report Submission

July 03, 2024: This final report includes the results of all requested analyses.

June 20, 2024: This is a preliminary report.

MCP Related Narratives

Sample Receipt

L2432894-11: The analyses performed were specified by the client.

Volatile Organics

L2432894-01, -12, -13, and -14: Initial calibration utilized a quadratic fit for: cis-1,3-dichloropropene, 1,2,4-trichlorobenzene, naphthalene

In reference to question H:

L2432894-01, -12, -13, and -14: Initial Calibration did not meet:

Lowest Calibration Standard Minimum Response Factor: 1,1-dichloroethane (0.2083), cis-1,2-dichloroethene (0.1201), bromochloromethane (0.0727), chloroform (0.257), trichloroethene (0.1451), 1,2-dichloropropane (0.1222), bromodichloromethane (0.2), 1,4-dioxane (0.0006), trans-1,3-dichloropropene (0.1531), 1,1,2-trichloroethane (0.1208), 1,2-dibromoethane (0.1265), 1,2,3-trichlorobenzene (0.358)

Average Response Factor: 1,1-dichloroethane, cis-1,2-dichloroethene, bromochloromethane, chloroform, trichloroethene, 1,2-dichloropropane, bromodichloromethane, 1,4-dioxane, trans-1,3-dichloropropene, 1,1,2-trichloroethane, 1,2-dibromoethane

Verification: carbon disulfide (63%)

L2432894-01, -12, -13, and -14: The associated continuing calibration standard is outside the acceptance criteria for one compound; however, it is within overall method allowances. Associated results are considered to

Project Name: BARNSTABLE **Lab Number:** L2432894
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Case Narrative (continued)

be biased high if the %D is negative and biased low if the %D is positive. A copy of the continuing calibration standard is included as an addendum to this report.

VPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

Non-MCP Related Narratives

Perfluorinated Alkyl Acids by 1633

L2432894-01, -02, -05, -06, -13, -14, -15, and -17: The sample was re-analyzed on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

L2432894-01, -14, and WG1941542-4/-5: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

The WG1941542-4/-5 MS/MSD recoveries, performed on L2432894-01, are outside the acceptance criteria for perfluoropentanoic acid (pfpea) (MSD 27%), perfluorohexanoic acid (pfhxa) (MSD 183%), perfluoropentanesulfonic acid (pfpes) (179%/154%), perfluoroheptanoic acid (pfhpa) (MS 202%), perfluorohexanesulfonic acid (pfhxs) (308%/294%), perfluoroheptanesulfonic acid (pfhps) (MS 182%), perfluorooctanesulfonic acid (pfos) (485%/0%), perfluorononanesulfonic acid (pfns) (MS 154%), perfluorooctanesulfonamide (fosa) (174%/167%) and perfluoro-3-methoxypropanoic acid (pfmpa) (230%/213%).

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: Kelly Stenstrom

Title: Technical Director/Representative Date: 08/13/24

QC OUTLIER SUMMARY REPORT

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432894
Report Date: 08/13/24

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab								
1633	FS1-A	L2432894-01	Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	Surrogate	129	14-108	-	- - not applicable - -
1633	FS1-A	L2432894-01	N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	Surrogate	154	10-150	-	- - not applicable - -
1633	FS1-A	L2432894-01	N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	Surrogate	109	11-94	-	- - not applicable - -
1633	FS1-A	L2432894-01	N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	Surrogate	101	11-97	-	- - not applicable - -
1633	MW-3S	L2432894-14	1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	Surrogate	297	10-261	-	- - not applicable - -
1633	MW-3S	L2432894-14	1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	Surrogate	221	10-213	-	- - not applicable - -
1633	MW-3S	L2432894-14	N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	Surrogate	167	10-150	-	- - not applicable - -
1633	Batch QC (L2432894-01)	WG1941542-4	Perfluoropentanesulfonic Acid (PFPeS)	MS	179	40-150	01-11,13-17	potential high bias
1633	Batch QC (L2432894-01)	WG1941542-4	Perfluoroheptanoic Acid (PFHpA)	MS	202	40-150	01-11,13-17	potential high bias
1633	Batch QC (L2432894-01)	WG1941542-4	Perfluorohexanesulfonic Acid (PFHxS)	MS	308	40-150	01-11,13-17	potential high bias
1633	Batch QC (L2432894-01)	WG1941542-4	Perfluoroheptanesulfonic Acid (PFHpS)	MS	182	40-150	01-11,13-17	potential high bias
1633	Batch QC (L2432894-01)	WG1941542-4	Perfluorooctanesulfonic Acid (PFOS)	MS	485	40-150	01-11,13-17	potential high bias
1633	Batch QC (L2432894-01)	WG1941542-4	Perfluorononanesulfonic Acid (PFNS)	MS	154	40-150	01-11,13-17	potential high bias
1633	Batch QC (L2432894-01)	WG1941542-4	Perfluorooctanesulfonamide (PFOSA)	MS	174	40-150	01-11,13-17	potential high bias
1633	Batch QC (L2432894-01)	WG1941542-4	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	MS	230	40-150	01-11,13-17	potential high bias
1633	Batch QC (L2432894-01)	WG1941542-4	1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	Surrogate	281	10-261	-	- - not applicable - -
1633	Batch QC (L2432894-01)	WG1941542-4	1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	Surrogate	221	10-213	-	- - not applicable - -
1633	Batch QC (L2432894-01)	WG1941542-4	Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	Surrogate	113	14-108	-	- - not applicable - -
1633	Batch QC (L2432894-01)	WG1941542-4	N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	Surrogate	151	10-150	-	- - not applicable - -
1633	Batch QC (L2432894-01)	WG1941542-5	Perfluoropentanoic Acid (PFPeA)	MSD	27	40-150	01-11,13-17	potential low bias

QC OUTLIER SUMMARY REPORT

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432894
Report Date: 08/13/24

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
1633	Batch QC (L2432894-01)	WG1941542-5	Perfluorohexanoic Acid (PFHxA)	MSD	183	40-150	01-11,13-17	potential high bias
1633	Batch QC (L2432894-01)	WG1941542-5	Perfluoropentanesulfonic Acid (PFPeS)	MSD	154	40-150	01-11,13-17	potential high bias
1633	Batch QC (L2432894-01)	WG1941542-5	Perfluorohexanesulfonic Acid (PFHxS)	MSD	294	40-150	01-11,13-17	potential high bias
1633	Batch QC (L2432894-01)	WG1941542-5	Perfluorooctanesulfonic Acid (PFOS)	MSD	0	40-150	01-11,13-17	potential low bias
1633	Batch QC (L2432894-01)	WG1941542-5	Perfluorooctanesulfonamide (PFOSA)	MSD	167	40-150	01-11,13-17	potential high bias
1633	Batch QC (L2432894-01)	WG1941542-5	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	MSD	213	40-150	01-11,13-17	potential high bias
1633	Batch QC (L2432894-01)	WG1941542-5	1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	Surrogate	283	10-261	-	- - not applicable - -
1633	Batch QC (L2432894-01)	WG1941542-5	1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	Surrogate	216	10-213	-	- - not applicable - -
1633	Batch QC (L2432894-01)	WG1941542-5	Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	Surrogate	110	14-108	-	- - not applicable - -
Volatile Petroleum Hydrocarbons - Westborough Lab								
VPH-18-2.1	Batch QC	WG1936391-2	2,5-Dibromotoluene-PID	Surrogate	137	70-130	-	potential high bias
VPH-18-2.1	Batch QC	WG1936391-2	2,5-Dibromotoluene-FID	Surrogate	133	70-130	-	potential high bias
VPH-18-2.1	Batch QC	WG1936391-3	2,5-Dibromotoluene-PID	Surrogate	134	70-130	-	potential high bias

ORGANICS

VOLATILES

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-01 Date Collected: 06/10/24 14:50
Client ID: FS1-A Date Received: 06/12/24
Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 141,8260D
Analytical Date: 06/19/24 07:03
Analyst: MCM

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

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-01 Date Collected: 06/10/24 14:50

Client ID: FS1-A Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	0.18	1
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18	1
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19	1
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19	1
Methyl tert butyl ether	ND		ug/l	2.0	0.17	1
p/m-Xylene	ND		ug/l	2.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19	1
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16	1
Dibromomethane	ND		ug/l	2.0	0.36	1
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	2.0	0.24	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	2.0	0.30	1
Methyl ethyl ketone	ND		ug/l	5.0	1.9	1
Methyl isobutyl ketone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Bromochloromethane	ND		ug/l	2.0	0.15	1
Tetrahydrofuran	ND		ug/l	2.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.0	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.0	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16	1
Bromobenzene	ND		ug/l	2.0	0.15	1
n-Butylbenzene	0.52	J	ug/l	2.0	0.19	1
sec-Butylbenzene	0.88	J	ug/l	2.0	0.18	1
tert-Butylbenzene	ND		ug/l	2.0	0.20	1
o-Chlorotoluene	ND		ug/l	2.0	0.22	1
p-Chlorotoluene	ND		ug/l	2.0	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35	1
Hexachlorobutadiene	ND		ug/l	0.60	0.22	1
Isopropylbenzene	0.55	J	ug/l	2.0	0.19	1
p-Isopropyltoluene	ND		ug/l	2.0	0.19	1
Naphthalene	0.68	J	ug/l	2.0	0.22	1
n-Propylbenzene	1.2	J	ug/l	2.0	0.17	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-01 Date Collected: 06/10/24 14:50

Client ID: FS1-A Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22	1
1,3,5-Trimethylbenzene	2.1		ug/l	2.0	0.22	1
1,2,4-Trimethylbenzene	8.4		ug/l	2.0	0.19	1
Diethyl ether	ND		ug/l	2.0	0.16	1
Diisopropyl Ether	ND		ug/l	2.0	0.42	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28	1
1,4-Dioxane	ND		ug/l	250	61.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	96		70-130

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-12 Date Collected: 06/11/24 14:45
Client ID: MW-2 Date Received: 06/12/24
Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 141,8260D
Analytical Date: 06/19/24 07:51
Analyst: MCM

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

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-12 Date Collected: 06/11/24 14:45

Client ID: MW-2 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

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

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-12 Date Collected: 06/11/24 14:45

Client ID: MW-2 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	100		70-130

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-13 Date Collected: 06/11/24 15:15
Client ID: MW-10 Date Received: 06/12/24
Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 141,8260D
Analytical Date: 06/19/24 08:38
Analyst: MCM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	0.68	1
1,1-Dichloroethane	ND		ug/l	1.0	0.21	1
Chloroform	3.4		ug/l	1.0	0.22	1
Carbon tetrachloride	ND		ug/l	1.0	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	1.0	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14	1
Tetrachloroethene	ND		ug/l	1.0	0.18	1
Chlorobenzene	ND		ug/l	1.0	0.18	1
Trichlorofluoromethane	ND		ug/l	2.0	0.16	1
1,2-Dichloroethane	ND		ug/l	1.0	0.13	1
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16	1
Bromodichloromethane	ND		ug/l	1.0	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14	1
1,1-Dichloropropene	ND		ug/l	2.0	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	1.0	0.20	1
Ethylbenzene	ND		ug/l	1.0	0.17	1
Chloromethane	ND		ug/l	2.0	0.20	1
Bromomethane	ND		ug/l	2.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.0	0.13	1
1,1-Dichloroethene	ND		ug/l	1.0	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-13 Date Collected: 06/11/24 15:15

Client ID: MW-10 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

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

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-13 Date Collected: 06/11/24 15:15

Client ID: MW-10 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	101		70-130

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-14 Date Collected: 06/11/24 16:15
Client ID: MW-3S Date Received: 06/12/24
Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 141,8260D
Analytical Date: 06/19/24 09:02
Analyst: MCM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	0.68	1
1,1-Dichloroethane	ND		ug/l	1.0	0.21	1
Chloroform	ND		ug/l	1.0	0.22	1
Carbon tetrachloride	ND		ug/l	1.0	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	1.0	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14	1
Tetrachloroethene	ND		ug/l	1.0	0.18	1
Chlorobenzene	ND		ug/l	1.0	0.18	1
Trichlorofluoromethane	ND		ug/l	2.0	0.16	1
1,2-Dichloroethane	ND		ug/l	1.0	0.13	1
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16	1
Bromodichloromethane	ND		ug/l	1.0	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14	1
1,1-Dichloropropene	ND		ug/l	2.0	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	1.0	0.20	1
Ethylbenzene	1.9		ug/l	1.0	0.17	1
Chloromethane	ND		ug/l	2.0	0.20	1
Bromomethane	ND		ug/l	2.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.0	0.13	1
1,1-Dichloroethene	ND		ug/l	1.0	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-14 Date Collected: 06/11/24 16:15

Client ID: MW-3S Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	0.18	1
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18	1
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19	1
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19	1
Methyl tert butyl ether	ND		ug/l	2.0	0.17	1
p/m-Xylene	5.7		ug/l	2.0	0.33	1
o-Xylene	3.5		ug/l	1.0	0.39	1
Xylenes, Total	9.2		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19	1
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16	1
Dibromomethane	ND		ug/l	2.0	0.36	1
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	2.0	0.24	1
Acetone	4.5	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	2.0	0.30	1
Methyl ethyl ketone	ND		ug/l	5.0	1.9	1
Methyl isobutyl ketone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Bromochloromethane	ND		ug/l	2.0	0.15	1
Tetrahydrofuran	ND		ug/l	2.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.0	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.0	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16	1
Bromobenzene	ND		ug/l	2.0	0.15	1
n-Butylbenzene	0.87	J	ug/l	2.0	0.19	1
sec-Butylbenzene	1.1	J	ug/l	2.0	0.18	1
tert-Butylbenzene	ND		ug/l	2.0	0.20	1
o-Chlorotoluene	ND		ug/l	2.0	0.22	1
p-Chlorotoluene	ND		ug/l	2.0	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35	1
Hexachlorobutadiene	ND		ug/l	0.60	0.22	1
Isopropylbenzene	1.2	J	ug/l	2.0	0.19	1
p-Isopropyltoluene	0.91	J	ug/l	2.0	0.19	1
Naphthalene	41		ug/l	2.0	0.22	1
n-Propylbenzene	1.8	J	ug/l	2.0	0.17	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-14 Date Collected: 06/11/24 16:15

Client ID: MW-3S Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22	1
1,3,5-Trimethylbenzene	3.7		ug/l	2.0	0.22	1
1,2,4-Trimethylbenzene	15		ug/l	2.0	0.19	1
Diethyl ether	ND		ug/l	2.0	0.16	1
Diisopropyl Ether	ND		ug/l	2.0	0.42	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28	1
1,4-Dioxane	ND		ug/l	250	61.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	102		70-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 06/19/24 06:16
Analyst: MCM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01,12-14 Batch: WG1936533-5					
Methylene chloride	ND		ug/l	2.0	0.68
1,1-Dichloroethane	ND		ug/l	1.0	0.21
Chloroform	ND		ug/l	1.0	0.22
Carbon tetrachloride	ND		ug/l	1.0	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	1.0	0.15
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14
Tetrachloroethene	ND		ug/l	1.0	0.18
Chlorobenzene	ND		ug/l	1.0	0.18
Trichlorofluoromethane	ND		ug/l	2.0	0.16
1,2-Dichloroethane	ND		ug/l	1.0	0.13
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16
Bromodichloromethane	ND		ug/l	1.0	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14
1,1-Dichloropropene	ND		ug/l	2.0	0.24
Bromoform	ND		ug/l	2.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	1.0	0.20
Ethylbenzene	ND		ug/l	1.0	0.17
Chloromethane	ND		ug/l	2.0	0.20
Bromomethane	ND		ug/l	2.0	0.26
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.0	0.13
1,1-Dichloroethene	ND		ug/l	1.0	0.17
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16
Trichloroethene	ND		ug/l	1.0	0.18

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 06/19/24 06:16
Analyst: MCM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01,12-14 Batch: WG1936533-5					
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19
Methyl tert butyl ether	ND		ug/l	2.0	0.17
p/m-Xylene	ND		ug/l	2.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16
Dibromomethane	ND		ug/l	2.0	0.36
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18
Styrene	ND		ug/l	1.0	0.36
Dichlorodifluoromethane	ND		ug/l	2.0	0.24
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	2.0	0.30
Methyl ethyl ketone	ND		ug/l	5.0	1.9
Methyl isobutyl ketone	ND		ug/l	5.0	0.42
2-Hexanone	ND		ug/l	5.0	0.52
Bromochloromethane	ND		ug/l	2.0	0.15
Tetrahydrofuran	ND		ug/l	2.0	0.52
2,2-Dichloropropane	ND		ug/l	2.0	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
1,3-Dichloropropane	ND		ug/l	2.0	0.21
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16
Bromobenzene	ND		ug/l	2.0	0.15
n-Butylbenzene	ND		ug/l	2.0	0.19
sec-Butylbenzene	ND		ug/l	2.0	0.18
tert-Butylbenzene	ND		ug/l	2.0	0.20
o-Chlorotoluene	ND		ug/l	2.0	0.22

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 06/19/24 06:16
Analyst: MCM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01,12-14 Batch: WG1936533-5					
p-Chlorotoluene	ND		ug/l	2.0	0.18
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35
Hexachlorobutadiene	ND		ug/l	0.60	0.22
Isopropylbenzene	ND		ug/l	2.0	0.19
p-Isopropyltoluene	ND		ug/l	2.0	0.19
Naphthalene	ND		ug/l	2.0	0.22
n-Propylbenzene	ND		ug/l	2.0	0.17
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22
1,3,5-Trimethylbenzene	ND		ug/l	2.0	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.0	0.19
Diethyl ether	ND		ug/l	2.0	0.16
Diisopropyl Ether	ND		ug/l	2.0	0.42
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28
1,4-Dioxane	ND		ug/l	250	61.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	102		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432894

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01,12-14 Batch: WG1936533-3 WG1936533-4								
Methylene chloride	94		93		70-130	1		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	110		100		70-130	10		20
Carbon tetrachloride	98		100		70-130	2		20
1,2-Dichloropropane	110		110		70-130	0		20
Dibromochloromethane	92		91		70-130	1		20
1,1,2-Trichloroethane	100		98		70-130	2		20
Tetrachloroethene	94		93		70-130	1		20
Chlorobenzene	99		97		70-130	2		20
Trichlorofluoromethane	100		100		70-130	0		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	100		100		70-130	0		20
Bromodichloromethane	100		100		70-130	0		20
trans-1,3-Dichloropropene	100		100		70-130	0		20
cis-1,3-Dichloropropene	100		100		70-130	0		20
1,1-Dichloropropene	110		110		70-130	0		20
Bromoform	82		80		70-130	2		20
1,1,2,2-Tetrachloroethane	97		94		70-130	3		20
Benzene	110		100		70-130	10		20
Toluene	100		100		70-130	0		20
Ethylbenzene	100		100		70-130	0		20
Chloromethane	100		110		70-130	10		20
Bromomethane	90		95		70-130	5		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432894

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01,12-14 Batch: WG1936533-3 WG1936533-4								
Vinyl chloride	99		98		70-130	1		20
Chloroethane	94		91		70-130	3		20
1,1-Dichloroethene	100		100		70-130	0		20
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	100		100		70-130	0		20
1,2-Dichlorobenzene	92		92		70-130	0		20
1,3-Dichlorobenzene	100		99		70-130	1		20
1,4-Dichlorobenzene	91		90		70-130	1		20
Methyl tert butyl ether	100		97		70-130	3		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	90		90		70-130	0		20
cis-1,2-Dichloroethene	100		100		70-130	0		20
Dibromomethane	97		95		70-130	2		20
1,2,3-Trichloropropane	100		96		70-130	4		20
Styrene	90		90		70-130	0		20
Dichlorodifluoromethane	83		84		70-130	1		20
Acetone	120		110		70-130	9		20
Carbon disulfide	100		100		70-130	0		20
Methyl ethyl ketone	120		100		70-130	18		20
Methyl isobutyl ketone	93		90		70-130	3		20
2-Hexanone	93		97		70-130	4		20
Bromochloromethane	100		100		70-130	0		20
Tetrahydrofuran	120		110		70-130	9		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432894

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01,12-14 Batch: WG1936533-3 WG1936533-4								
2,2-Dichloropropane	110		110		70-130	0		20
1,2-Dibromoethane	99		98		70-130	1		20
1,3-Dichloropropane	100		99		70-130	1		20
1,1,1,2-Tetrachloroethane	94		92		70-130	2		20
Bromobenzene	88		88		70-130	0		20
n-Butylbenzene	91		92		70-130	1		20
sec-Butylbenzene	91		94		70-130	3		20
tert-Butylbenzene	88		90		70-130	2		20
o-Chlorotoluene	100		100		70-130	0		20
p-Chlorotoluene	99		100		70-130	1		20
1,2-Dibromo-3-chloropropane	86		80		70-130	7		20
Hexachlorobutadiene	85		86		70-130	1		20
Isopropylbenzene	86		88		70-130	2		20
p-Isopropyltoluene	90		90		70-130	0		20
Naphthalene	76		75		70-130	1		20
n-Propylbenzene	98		98		70-130	0		20
1,2,3-Trichlorobenzene	86		83		70-130	4		20
1,2,4-Trichlorobenzene	85		82		70-130	4		20
1,3,5-Trimethylbenzene	97		97		70-130	0		20
1,2,4-Trimethylbenzene	90		92		70-130	2		20
Diethyl ether	100		95		70-130	5		20
Diisopropyl Ether	110		110		70-130	0		20
Ethyl-Tert-Butyl-Ether	100		100		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432894

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01,12-14 Batch: WG1936533-3 WG1936533-4								
Tertiary-Amyl Methyl Ether	97		96		70-130	1		20
1,4-Dioxane	84		74		70-130	13		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104		100		70-130
Toluene-d8	102		103		70-130
4-Bromofluorobenzene	101		102		70-130
Dibromofluoromethane	98		97		70-130

SEMIVOLATILES

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-01
Client ID: FS1-A
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 14:50
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 13:23
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	201		ng/l	5.81	0.930	1
Perfluoropentanoic Acid (PFPeA)	705		ng/l	2.90	0.777	1
Perfluorobutanesulfonic Acid (PFBS)	85.4		ng/l	1.45	0.487	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.81	1.52	1
Perfluorohexanoic Acid (PFHxA)	787	E	ng/l	1.45	0.429	1
Perfluoropentanesulfonic Acid (PFPeS)	150		ng/l	1.45	0.254	1
Perfluoroheptanoic Acid (PFHpA)	440		ng/l	1.45	0.290	1
Perfluorohexanesulfonic Acid (PFHxS)	3250	E	ng/l	1.45	0.349	1
Perfluorooctanoic Acid (PFOA)	1360	E	ng/l	1.45	0.632	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	25.6		ng/l	5.81	1.96	1
Perfluoroheptanesulfonic Acid (PFHpS)	50.6		ng/l	1.45	0.392	1
Perfluorononanoic Acid (PFNA)	99.2		ng/l	1.45	0.458	1
Perfluorooctanesulfonic Acid (PFOS)	2760	E	ng/l	1.45	0.661	1
Perfluorodecanoic Acid (PFDA)	35.0		ng/l	1.45	0.588	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	21.1		ng/l	5.81	2.26	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.45	0.450	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.45	0.792	1
Perfluoroundecanoic Acid (PFUnA)	160		ng/l	1.45	0.632	1
Perfluorodecanesulfonic Acid (PFDS)	2.58		ng/l	1.45	0.334	1
Perfluorooctanesulfonamide (PFOSA)	105		ng/l	1.45	0.392	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.45	0.784	1
Perfluorododecanoic Acid (PFDoA)	0.894	J	ng/l	1.45	0.668	1
Perfluorotridecanoic Acid (PFTrDA)	1.82		ng/l	1.45	0.545	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.45	0.385	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.81	0.814	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.81	0.915	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.45	0.552	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-01 Date Collected: 06/10/24 14:50

Client ID: FS1-A Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.81	1.20	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.81	1.20	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.45	0.632	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.45	0.668	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.5	3.41	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.5	1.78	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.90	0.414	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.90	0.385	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.90	0.320	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.90	1.71	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.26	2.40	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.3	8.50	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.3	5.73	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-01 Date Collected: 06/10/24 14:50

Client ID: FS1-A Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	87		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	76		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	109		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	224		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	85		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	106		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	85		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	86		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	255		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	83		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	88		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	83		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	170		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	115		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	87		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	**129**	Q	14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	**154**	Q	10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	105		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	96		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	104		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	**109**	Q	11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	**101**	Q	11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	120		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	117		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-01 D
Client ID: FS1-A
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 14:50
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 18:42
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorohexanoic Acid (PFHxA)	849		ng/l	14.5	4.29	10
Perfluorohexanesulfonic Acid (PFHxS)	3330		ng/l	14.5	3.49	10
Perfluorooctanoic Acid (PFOA)	1370		ng/l	14.5	6.32	10
Perfluorooctanesulfonic Acid (PFOS)	2480		ng/l	14.5	6.61	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	64		40-121
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	68		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	64		39-121
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	70		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-02
Client ID: FS1-B
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 13:50
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 14:01
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	40.2		ng/l	5.69	0.910	1
Perfluoropentanoic Acid (PFPeA)	93.6		ng/l	2.84	0.761	1
Perfluorobutanesulfonic Acid (PFBS)	7.74		ng/l	1.42	0.476	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.69	1.48	1
Perfluorohexanoic Acid (PFHxA)	86.2		ng/l	1.42	0.419	1
Perfluoropentanesulfonic Acid (PFPeS)	13.9		ng/l	1.42	0.249	1
Perfluoroheptanoic Acid (PFHpA)	71.3		ng/l	1.42	0.284	1
Perfluorohexanesulfonic Acid (PFHxS)	131		ng/l	1.42	0.341	1
Perfluorooctanoic Acid (PFOA)	72.1		ng/l	1.42	0.618	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	20.4		ng/l	5.69	1.92	1
Perfluoroheptanesulfonic Acid (PFHpS)	9.92		ng/l	1.42	0.384	1
Perfluorononanoic Acid (PFNA)	129		ng/l	1.42	0.448	1
Perfluorooctanesulfonic Acid (PFOS)	658	E	ng/l	1.42	0.647	1
Perfluorodecanoic Acid (PFDA)	6.08		ng/l	1.42	0.576	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	4.29	J	ng/l	5.69	2.21	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.42	0.441	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	1.01	JF	ng/l	1.42	0.775	1
Perfluoroundecanoic Acid (PFUnA)	12.3		ng/l	1.42	0.618	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.42	0.327	1
Perfluorooctanesulfonamide (PFOSA)	2.62		ng/l	1.42	0.384	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.42	0.768	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.42	0.654	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.42	0.533	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.42	0.377	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.69	0.796	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.69	0.896	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.42	0.540	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-02 Date Collected: 06/10/24 13:50

Client ID: FS1-B Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.69	1.17	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.69	1.17	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.42	0.618	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.42	0.654	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.2	3.34	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.2	1.74	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.84	0.405	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.84	0.377	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.84	0.313	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.84	1.68	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.11	2.35	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	35.5	8.32	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	35.5	5.61	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-02 Date Collected: 06/10/24 13:50

Client ID: FS1-B Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	85		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	82		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	85		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	179		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	85		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	93		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	81		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	80		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	104		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	75		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	77		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	64		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	98		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	73		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	63		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	86		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	87		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	58		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	52		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	90		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	72		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	68		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	84		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	81		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-02 D
Client ID: FS1-B
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 13:50
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 18:38
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	677		ng/l	7.11	3.24	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	51		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-03
Client ID: FS1-C
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 12:50
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 14:14
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.43	J	ng/l	5.72	0.916	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.86	0.766	1
Perfluorobutanesulfonic Acid (PFBS)	0.558	J	ng/l	1.43	0.479	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.72	1.50	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.43	0.422	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.43	0.250	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.43	0.286	1
Perfluorohexanesulfonic Acid (PFHxS)	0.758	J	ng/l	1.43	0.343	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.43	0.622	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.72	1.93	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.43	0.386	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.43	0.451	1
Perfluorooctanesulfonic Acid (PFOS)	2.21		ng/l	1.43	0.651	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.43	0.579	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.72	2.22	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.43	0.444	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.43	0.780	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.43	0.622	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.43	0.329	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.43	0.386	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.43	0.773	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.43	0.658	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.43	0.536	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.43	0.379	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.72	0.801	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.72	0.901	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.43	0.544	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-03 Date Collected: 06/10/24 12:50

Client ID: FS1-C Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.72	1.18	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.72	1.18	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.43	0.622	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.43	0.658	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.3	3.36	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.3	1.75	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.86	0.408	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.86	0.379	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.86	0.315	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.86	1.69	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.15	2.36	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	35.8	8.37	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	35.8	5.64	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-03 Date Collected: 06/10/24 12:50

Client ID: FS1-C Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	89		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	89		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	90		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	105		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	86		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	95		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	86		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	88		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	95		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	87		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	92		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	81		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	74		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	79		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	84		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	86		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	87		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	97		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	82		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	95		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	70		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	76		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	96		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	95		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-04
Client ID: MW-201
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 11:10
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 14:39
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.89	J	ng/l	5.78	0.924	1
Perfluoropentanoic Acid (PFPeA)	5.26		ng/l	2.89	0.772	1
Perfluorobutanesulfonic Acid (PFBS)	3.65		ng/l	1.44	0.484	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.78	1.51	1
Perfluorohexanoic Acid (PFHxA)	3.93		ng/l	1.44	0.426	1
Perfluoropentanesulfonic Acid (PFPeS)	3.34		ng/l	1.44	0.253	1
Perfluoroheptanoic Acid (PFHpA)	2.35		ng/l	1.44	0.289	1
Perfluorohexanesulfonic Acid (PFHxS)	24.0		ng/l	1.44	0.346	1
Perfluorooctanoic Acid (PFOA)	3.93		ng/l	1.44	0.628	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.78	1.95	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.765	J	ng/l	1.44	0.390	1
Perfluorononanoic Acid (PFNA)	2.47		ng/l	1.44	0.455	1
Perfluorooctanesulfonic Acid (PFOS)	71.3		ng/l	1.44	0.657	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.44	0.585	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.78	2.24	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.44	0.448	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.44	0.787	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.44	0.628	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.44	0.332	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.44	0.390	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.44	0.780	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.44	0.664	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.44	0.541	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.44	0.383	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.78	0.809	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.78	0.910	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.44	0.549	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-04 Date Collected: 06/10/24 11:10

Client ID: MW-201 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.78	1.19	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.78	1.19	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.44	0.628	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.44	0.664	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.4	3.39	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.4	1.77	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.89	0.412	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.89	0.383	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.89	0.318	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.89	1.70	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.22	2.38	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.1	8.45	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.1	5.70	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-04 Date Collected: 06/10/24 11:10

Client ID: MW-201 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	89		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	88		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	90		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	104		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	86		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	94		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	87		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	87		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	94		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	81		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	85		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	76		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	73		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	74		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	75		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	79		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	83		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	84		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	77		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	94		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	69		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	75		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	86		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	87		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-05
Client ID: MW-302
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 13:15
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 14:52
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	16.4		ng/l	5.79	0.926	1
Perfluoropentanoic Acid (PFPeA)	53.9		ng/l	2.89	0.774	1
Perfluorobutanesulfonic Acid (PFBS)	6.82		ng/l	1.45	0.485	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.79	1.51	1
Perfluorohexanoic Acid (PFHxA)	51.9		ng/l	1.45	0.427	1
Perfluoropentanesulfonic Acid (PFPeS)	13.1		ng/l	1.45	0.253	1
Perfluoroheptanoic Acid (PFHpA)	29.9		ng/l	1.45	0.289	1
Perfluorohexanesulfonic Acid (PFHxS)	136		ng/l	1.45	0.347	1
Perfluorooctanoic Acid (PFOA)	26.1		ng/l	1.45	0.629	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.79	1.95	1
Perfluoroheptanesulfonic Acid (PFHpS)	3.18		ng/l	1.45	0.391	1
Perfluorononanoic Acid (PFNA)	12.0		ng/l	1.45	0.456	1
Perfluorooctanesulfonic Acid (PFOS)	625	E	ng/l	1.45	0.658	1
Perfluorodecanoic Acid (PFDA)	0.738	J	ng/l	1.45	0.586	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.79	2.25	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.45	0.448	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.45	0.789	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.45	0.629	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.45	0.333	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.45	0.391	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.45	0.781	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.45	0.666	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.45	0.543	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.45	0.383	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.79	0.810	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.79	0.912	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.45	0.550	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-05 Date Collected: 06/10/24 13:15

Client ID: MW-302 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.79	1.19	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.79	1.19	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.45	0.629	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.45	0.666	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.5	3.40	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.5	1.77	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.89	0.412	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.89	0.383	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.89	0.318	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.89	1.71	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.24	2.39	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.2	8.46	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.2	5.71	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-05 Date Collected: 06/10/24 13:15

Client ID: MW-302 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	90		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	95		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	90		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	109		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	91		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	98		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	91		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	90		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	97		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	92		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	87		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	84		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	74		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	71		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	83		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	96		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	89		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	80		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	75		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	102		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	76		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	78		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	98		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	96		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-05 D
Client ID: MW-302
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 13:15
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 18:51
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	633		ng/l	7.24	3.29	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	73		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-06
Client ID: MW-303
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 15:45
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 15:05
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	26.2		ng/l	5.86	0.937	1
Perfluoropentanoic Acid (PFPeA)	65.7		ng/l	2.93	0.783	1
Perfluorobutanesulfonic Acid (PFBS)	11.3		ng/l	1.46	0.490	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.86	1.53	1
Perfluorohexanoic Acid (PFHxA)	58.5		ng/l	1.46	0.432	1
Perfluoropentanesulfonic Acid (PFPeS)	24.2		ng/l	1.46	0.256	1
Perfluoroheptanoic Acid (PFHpA)	37.2		ng/l	1.46	0.293	1
Perfluorohexanesulfonic Acid (PFHxS)	185		ng/l	1.46	0.351	1
Perfluorooctanoic Acid (PFOA)	43.0		ng/l	1.46	0.637	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	10.6		ng/l	5.86	1.98	1
Perfluoroheptanesulfonic Acid (PFHpS)	7.64		ng/l	1.46	0.395	1
Perfluorononanoic Acid (PFNA)	78.4		ng/l	1.46	0.461	1
Perfluorooctanesulfonic Acid (PFOS)	442	E	ng/l	1.46	0.666	1
Perfluorodecanoic Acid (PFDA)	3.58		ng/l	1.46	0.593	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.86	2.28	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.46	0.454	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.46	0.798	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.46	0.637	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.46	0.337	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.46	0.395	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.46	0.791	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.46	0.674	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.46	0.549	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.46	0.388	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.86	0.820	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.86	0.922	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.46	0.556	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-06 Date Collected: 06/10/24 15:45

Client ID: MW-303 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.86	1.21	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.86	1.21	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.46	0.637	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.46	0.674	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.6	3.44	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.6	1.79	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.93	0.417	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.93	0.388	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.93	0.322	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.93	1.73	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.32	2.42	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.6	8.57	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.6	5.78	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-06 Date Collected: 06/10/24 15:45

Client ID: MW-303 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	89		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	84		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	94		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	129		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	89		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	95		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	89		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	89		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	105		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	88		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	89		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	73		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	76		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	82		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	78		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	94		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	87		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	83		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	78		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	101		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	84		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	81		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	97		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	98		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-06 D
Client ID: MW-303
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 15:45
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 19:04
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	446		ng/l	7.32	3.33	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	66		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-07
Client ID: MW-304
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 14:00
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 15:17
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	19.0		ng/l	6.25	1.00	1
Perfluoropentanoic Acid (PFPeA)	46.1		ng/l	3.12	0.836	1
Perfluorobutanesulfonic Acid (PFBS)	3.11		ng/l	1.56	0.524	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.25	1.63	1
Perfluorohexanoic Acid (PFHxA)	44.0		ng/l	1.56	0.461	1
Perfluoropentanesulfonic Acid (PFPeS)	5.02		ng/l	1.56	0.273	1
Perfluoroheptanoic Acid (PFHpA)	68.7		ng/l	1.56	0.312	1
Perfluorohexanesulfonic Acid (PFHxS)	108		ng/l	1.56	0.375	1
Perfluorooctanoic Acid (PFOA)	83.3		ng/l	1.56	0.680	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	51.8		ng/l	6.25	2.11	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.11		ng/l	1.56	0.422	1
Perfluorononanoic Acid (PFNA)	10.8		ng/l	1.56	0.492	1
Perfluorooctanesulfonic Acid (PFOS)	77.4		ng/l	1.56	0.711	1
Perfluorodecanoic Acid (PFDA)	2.74		ng/l	1.56	0.633	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	38.6		ng/l	6.25	2.43	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.56	0.484	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.56	0.852	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.56	0.680	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.56	0.359	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.56	0.422	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.56	0.844	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.56	0.719	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.56	0.586	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.56	0.414	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.25	0.875	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.25	0.984	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.56	0.594	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-07 Date Collected: 06/10/24 14:00

Client ID: MW-304 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.25	1.29	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.25	1.29	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.56	0.680	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.56	0.719	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.6	3.67	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.6	1.91	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.12	0.445	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.12	0.414	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.12	0.344	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.12	1.84	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.81	2.58	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	39.1	9.14	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	39.1	6.16	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-07 Date Collected: 06/10/24 14:00

Client ID: MW-304 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	87		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	82		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	87		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	133		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	80		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	85		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	83		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	83		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	91		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	76		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	81		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	62		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	80		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	62		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	59		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	64		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	68		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	56		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	51		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	89		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	52		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	53		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	70		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	70		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-08
Client ID: MW-306
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 12:40
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 15:30
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.49	J	ng/l	6.16	0.985	1
Perfluoropentanoic Acid (PFPeA)	6.89		ng/l	3.08	0.823	1
Perfluorobutanesulfonic Acid (PFBS)	2.77		ng/l	1.54	0.516	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.16	1.61	1
Perfluorohexanoic Acid (PFHxA)	8.02		ng/l	1.54	0.454	1
Perfluoropentanesulfonic Acid (PFPeS)	2.99		ng/l	1.54	0.269	1
Perfluoroheptanoic Acid (PFHpA)	8.46		ng/l	1.54	0.308	1
Perfluorohexanesulfonic Acid (PFHxS)	42.8		ng/l	1.54	0.369	1
Perfluorooctanoic Acid (PFOA)	7.93		ng/l	1.54	0.669	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	4.59	J	ng/l	6.16	2.08	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.97		ng/l	1.54	0.416	1
Perfluorononanoic Acid (PFNA)	5.22		ng/l	1.54	0.485	1
Perfluorooctanesulfonic Acid (PFOS)	191		ng/l	1.54	0.700	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.54	0.623	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.16	2.39	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.54	0.477	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.54	0.839	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.54	0.669	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.54	0.354	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.54	0.416	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.54	0.831	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.54	0.708	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.54	0.577	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.54	0.408	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.16	0.862	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.16	0.970	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.54	0.585	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-08 Date Collected: 06/10/24 12:40

Client ID: MW-306 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.16	1.27	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.16	1.27	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.54	0.669	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.54	0.708	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.4	3.62	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.4	1.88	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.08	0.438	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.08	0.408	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.08	0.338	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.08	1.82	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.69	2.54	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	38.5	9.00	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	38.5	6.07	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-08 Date Collected: 06/10/24 12:40

Client ID: MW-306 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	94		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	97		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	100		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	130		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	93		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	96		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	94		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	93		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	101		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	82		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	77		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	87		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	75		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	71		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	88		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	84		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	70		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	62		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	99		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	68		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	74		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	86		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	90		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-09
Client ID: MW-310
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 15:10
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 15:43
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	4.30	J	ng/l	6.27	1.00	1
Perfluoropentanoic Acid (PFPeA)	5.96		ng/l	3.14	0.839	1
Perfluorobutanesulfonic Acid (PFBS)	3.06		ng/l	1.57	0.525	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.27	1.64	1
Perfluorohexanoic Acid (PFHxA)	5.51		ng/l	1.57	0.462	1
Perfluoropentanesulfonic Acid (PFPeS)	2.24		ng/l	1.57	0.274	1
Perfluoroheptanoic Acid (PFHpA)	2.82		ng/l	1.57	0.314	1
Perfluorohexanesulfonic Acid (PFHxS)	30.9		ng/l	1.57	0.376	1
Perfluorooctanoic Acid (PFOA)	7.74		ng/l	1.57	0.682	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.27	2.12	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.690	J	ng/l	1.57	0.423	1
Perfluorononanoic Acid (PFNA)	2.93		ng/l	1.57	0.494	1
Perfluorooctanesulfonic Acid (PFOS)	42.5		ng/l	1.57	0.713	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.57	0.635	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.27	2.44	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.57	0.486	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.57	0.854	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.57	0.682	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.57	0.361	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.57	0.423	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.57	0.847	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.57	0.721	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.57	0.588	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.57	0.415	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.27	0.878	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.27	0.988	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.57	0.596	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-09 Date Collected: 06/10/24 15:10

Client ID: MW-310 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.27	1.29	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.27	1.29	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.57	0.682	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.57	0.721	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.7	3.68	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.7	1.92	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.14	0.447	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.14	0.415	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.14	0.345	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.14	1.85	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.84	2.59	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	39.2	9.17	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	39.2	6.18	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-09 Date Collected: 06/10/24 15:10

Client ID: MW-310 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	90		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	95		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	88		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	93		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	89		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	94		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	90		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	89		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	93		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	87		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	93		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	81		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	71		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	76		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	92		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	98		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	84		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	99		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	87		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	99		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	82		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	84		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	102		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	103		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-10
Client ID: MW-405
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 18:10
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 16:47
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	8.82		ng/l	5.91	0.945	1
Perfluoropentanoic Acid (PFPeA)	22.4		ng/l	2.95	0.790	1
Perfluorobutanesulfonic Acid (PFBS)	3.76		ng/l	1.48	0.495	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.91	1.54	1
Perfluorohexanoic Acid (PFHxA)	16.0		ng/l	1.48	0.436	1
Perfluoropentanesulfonic Acid (PFPeS)	2.78		ng/l	1.48	0.258	1
Perfluoroheptanoic Acid (PFHpA)	8.99		ng/l	1.48	0.295	1
Perfluorohexanesulfonic Acid (PFHxS)	12.0		ng/l	1.48	0.354	1
Perfluorooctanoic Acid (PFOA)	22.2		ng/l	1.48	0.642	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	15.2		ng/l	5.91	1.99	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.975	J	ng/l	1.48	0.399	1
Perfluorononanoic Acid (PFNA)	4.42		ng/l	1.48	0.465	1
Perfluorooctanesulfonic Acid (PFOS)	33.0		ng/l	1.48	0.672	1
Perfluorodecanoic Acid (PFDA)	1.49		ng/l	1.48	0.598	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.91	2.30	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.48	0.458	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.48	0.805	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.48	0.642	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.48	0.340	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.48	0.399	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.48	0.798	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.48	0.679	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.48	0.554	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.48	0.391	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.91	0.827	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.91	0.930	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.48	0.561	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-10 Date Collected: 06/10/24 18:10

Client ID: MW-405 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.91	1.22	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.91	1.22	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.48	0.642	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.48	0.679	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.8	3.47	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.8	1.81	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.95	0.421	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.95	0.391	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.95	0.325	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.95	1.74	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.38	2.44	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.9	8.64	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.9	5.83	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-10 Date Collected: 06/10/24 18:10

Client ID: MW-405 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	93		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	98		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	102		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	125		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	97		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	102		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	96		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	93		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	109		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	89		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	92		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	81		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	107		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	88		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	77		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	91		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	102		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	75		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	70		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	100		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	76		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	77		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	89		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	90		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-11
Client ID: MW-406
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 12:20
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 17:00
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.43	J	ng/l	5.92	0.948	1
Perfluoropentanoic Acid (PFPeA)	1.50	J	ng/l	2.96	0.792	1
Perfluorobutanesulfonic Acid (PFBS)	1.10	J	ng/l	1.48	0.496	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.92	1.55	1
Perfluorohexanoic Acid (PFHxA)	2.52		ng/l	1.48	0.437	1
Perfluoropentanesulfonic Acid (PFPeS)	1.35	J	ng/l	1.48	0.259	1
Perfluoroheptanoic Acid (PFHpA)	3.86		ng/l	1.48	0.296	1
Perfluorohexanesulfonic Acid (PFHxS)	9.85		ng/l	1.48	0.355	1
Perfluorooctanoic Acid (PFOA)	1.71		ng/l	1.48	0.644	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	15.7		ng/l	5.92	2.00	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.48	0.400	1
Perfluorononanoic Acid (PFNA)	0.807	J	ng/l	1.48	0.466	1
Perfluorooctanesulfonic Acid (PFOS)	7.66		ng/l	1.48	0.674	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.48	0.600	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.92	2.30	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.48	0.459	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.48	0.807	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.48	0.644	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.48	0.340	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.48	0.400	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.48	0.800	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.48	0.681	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.48	0.555	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.48	0.392	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.92	0.829	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.92	0.933	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.48	0.563	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-11 Date Collected: 06/11/24 12:20

Client ID: MW-406 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.92	1.22	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.92	1.22	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.48	0.644	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.48	0.681	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.8	3.48	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.8	1.81	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.96	0.422	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.96	0.392	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.96	0.326	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.96	1.75	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.40	2.44	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.0	8.66	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.0	5.84	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-11 Date Collected: 06/11/24 12:20

Client ID: MW-406 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	94		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	100		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	97		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	121		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	91		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	95		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	95		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	93		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	99		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	92		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	97		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	83		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	93		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	80		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	81		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	87		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	87		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	80		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	70		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	97		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	74		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	80		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	90		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	89		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-13
Client ID: MW-10
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 15:15
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 17:13
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	25.2		ng/l	5.72	0.915	1
Perfluoropentanoic Acid (PFPeA)	77.7		ng/l	2.86	0.765	1
Perfluorobutanesulfonic Acid (PFBS)	19.9		ng/l	1.43	0.479	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.72	1.49	1
Perfluorohexanoic Acid (PFHxA)	132		ng/l	1.43	0.422	1
Perfluoropentanesulfonic Acid (PFPeS)	27.6		ng/l	1.43	0.250	1
Perfluoroheptanoic Acid (PFHpA)	57.5		ng/l	1.43	0.286	1
Perfluorohexanesulfonic Acid (PFHxS)	512	E	ng/l	1.43	0.343	1
Perfluorooctanoic Acid (PFOA)	345		ng/l	1.43	0.622	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	15.0		ng/l	5.72	1.93	1
Perfluoroheptanesulfonic Acid (PFHpS)	27.8		ng/l	1.43	0.386	1
Perfluorononanoic Acid (PFNA)	22.5		ng/l	1.43	0.450	1
Perfluorooctanesulfonic Acid (PFOS)	1930	E	ng/l	1.43	0.651	1
Perfluorodecanoic Acid (PFDA)	9.18		ng/l	1.43	0.579	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	55.6		ng/l	5.72	2.22	1
Perfluorononanesulfonic Acid (PFNS)	1.98		ng/l	1.43	0.443	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	20.0	F	ng/l	1.43	0.779	1
Perfluoroundecanoic Acid (PFUnA)	20.1		ng/l	1.43	0.622	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.43	0.329	1
Perfluorooctanesulfonamide (PFOSA)	713	E	ng/l	1.43	0.386	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.43	0.772	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.43	0.658	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.43	0.536	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.43	0.379	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.72	0.801	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.72	0.901	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.43	0.543	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-13 Date Collected: 06/11/24 15:15

Client ID: MW-10 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.72	1.18	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.72	1.18	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.43	0.622	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.43	0.658	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.3	3.36	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.3	1.75	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.86	0.408	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.86	0.379	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.86	0.314	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.86	1.69	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.15	2.36	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	35.7	8.36	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	35.7	5.64	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-13 Date Collected: 06/11/24 15:15

Client ID: MW-10 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	92		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	82		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	102		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	188		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	88		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	103		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	92		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	90		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	134		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	84		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	82		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	73		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	112		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	80		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	62		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	95		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	123		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	64		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	62		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	91		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	85		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	89		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	102		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	101		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-13 D
Client ID: MW-10
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 15:15
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 22:16
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorohexanesulfonic Acid (PFHxS)	514		ng/l	7.15	1.72	5
Perfluorooctanesulfonic Acid (PFOS)	1870		ng/l	7.15	3.25	5
Perfluorooctanesulfonamide (PFOSA)	723		ng/l	7.15	1.93	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	70		46-115
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	62		32-114
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	50		14-108

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-14
Client ID: MW-3S
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 16:15
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 17:26
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	110		ng/l	5.86	0.938	1
Perfluoropentanoic Acid (PFPeA)	447		ng/l	2.93	0.784	1
Perfluorobutanesulfonic Acid (PFBS)	24.6		ng/l	1.47	0.491	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.86	1.53	1
Perfluorohexanoic Acid (PFHxA)	322		ng/l	1.47	0.432	1
Perfluoropentanesulfonic Acid (PFPeS)	56.5		ng/l	1.47	0.256	1
Perfluoroheptanoic Acid (PFHpA)	215		ng/l	1.47	0.293	1
Perfluorohexanesulfonic Acid (PFHxS)	1080	E	ng/l	1.47	0.352	1
Perfluorooctanoic Acid (PFOA)	400		ng/l	1.47	0.638	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	186		ng/l	5.86	1.98	1
Perfluoroheptanesulfonic Acid (PFHpS)	33.6		ng/l	1.47	0.396	1
Perfluorononanoic Acid (PFNA)	73.0		ng/l	1.47	0.462	1
Perfluorooctanesulfonic Acid (PFOS)	2260	E	ng/l	1.47	0.667	1
Perfluorodecanoic Acid (PFDA)	8.19		ng/l	1.47	0.594	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	3.01	J	ng/l	5.86	2.28	1
Perfluorononanesulfonic Acid (PFNS)	0.858	J	ng/l	1.47	0.454	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.47	0.799	1
Perfluoroundecanoic Acid (PFUnA)	14.8		ng/l	1.47	0.638	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.47	0.337	1
Perfluorooctanesulfonamide (PFOSA)	23.1		ng/l	1.47	0.396	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.47	0.792	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.47	0.674	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.47	0.550	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.47	0.388	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.86	0.821	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.86	0.924	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.47	0.557	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-14 Date Collected: 06/11/24 16:15

Client ID: MW-3S Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.86	1.21	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.86	1.21	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	0.975	J	ng/l	1.47	0.638	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.47	0.674	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.7	3.44	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.7	1.80	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.93	0.418	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.93	0.388	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.93	0.322	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.93	1.73	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.33	2.42	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.6	8.58	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.6	5.78	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-14 Date Collected: 06/11/24 16:15

Client ID: MW-3S Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	90		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	76		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	102		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	282		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	94		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	112		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	91		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	88		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	**297**	Q	10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	83		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	85		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	64		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	**221**	Q	10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	125		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	66		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	103		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	**167**	Q	10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	73		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	76		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	101		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	81		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	82		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	88		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	90		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-14 D
Client ID: MW-3S
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 16:15
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 22:29
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorohexanesulfonic Acid (PFHxS)	1030		ng/l	7.33	1.76	5
Perfluorooctanesulfonic Acid (PFOS)	2060		ng/l	7.33	3.34	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	72		46-115
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	70		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-15
Client ID: MW-3I
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 13:00
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 17:38
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	37.0		ng/l	5.96	0.954	1
Perfluoropentanoic Acid (PFPeA)	90.0		ng/l	2.98	0.797	1
Perfluorobutanesulfonic Acid (PFBS)	8.41		ng/l	1.49	0.499	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.96	1.56	1
Perfluorohexanoic Acid (PFHxA)	86.4		ng/l	1.49	0.440	1
Perfluoropentanesulfonic Acid (PFPeS)	14.5		ng/l	1.49	0.261	1
Perfluoroheptanoic Acid (PFHpA)	66.2		ng/l	1.49	0.298	1
Perfluorohexanesulfonic Acid (PFHxS)	122		ng/l	1.49	0.358	1
Perfluorooctanoic Acid (PFOA)	66.1		ng/l	1.49	0.648	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	34.0		ng/l	5.96	2.01	1
Perfluoroheptanesulfonic Acid (PFHpS)	10.8		ng/l	1.49	0.402	1
Perfluorononanoic Acid (PFNA)	156		ng/l	1.49	0.470	1
Perfluorooctanesulfonic Acid (PFOS)	798	E	ng/l	1.49	0.678	1
Perfluorodecanoic Acid (PFDA)	8.25		ng/l	1.49	0.604	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	6.75		ng/l	5.96	2.32	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.49	0.462	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.49	0.812	1
Perfluoroundecanoic Acid (PFUnA)	23.6		ng/l	1.49	0.648	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.49	0.343	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.49	0.402	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.49	0.805	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.49	0.686	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.49	0.559	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.49	0.395	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.96	0.835	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.96	0.939	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.49	0.566	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-15 Date Collected: 06/11/24 13:00

Client ID: MW-3I Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.96	1.23	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.96	1.23	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.49	0.648	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.49	0.686	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.9	3.50	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	2.27	J	ng/l	14.9	1.83	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.98	0.425	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.98	0.395	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.98	0.328	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.98	1.76	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.45	2.46	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.3	8.72	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.3	5.88	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-15 Date Collected: 06/11/24 13:00

Client ID: MW-3I Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	69		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	64		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	65		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	99		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	69		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	77		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	64		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	66		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	79		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	69		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	68		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	67		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	62		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	66		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	72		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	86		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	71		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	81		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	77		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	73		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	69		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	74		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	85		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	92		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-15 D
Client ID: MW-3I
Sample Location: 155 S. FLINT ROCK ROAD

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/02/24 07:45
Analyst: AC

Date Collected: 06/11/24 13:00
Date Received: 06/12/24
Field Prep: Not Specified

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	698		ng/l	14.9	6.78	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	66		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-16
Client ID: MW-3D
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 14:20
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 17:51
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	6.86		ng/l	5.95	0.952	1
Perfluoropentanoic Acid (PFPeA)	8.35		ng/l	2.98	0.796	1
Perfluorobutanesulfonic Acid (PFBS)	2.60		ng/l	1.49	0.499	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.95	1.56	1
Perfluorohexanoic Acid (PFHxA)	9.79		ng/l	1.49	0.439	1
Perfluoropentanesulfonic Acid (PFPeS)	3.94		ng/l	1.49	0.260	1
Perfluoroheptanoic Acid (PFHpA)	8.88		ng/l	1.49	0.298	1
Perfluorohexanesulfonic Acid (PFHxS)	24.8		ng/l	1.49	0.357	1
Perfluorooctanoic Acid (PFOA)	7.65		ng/l	1.49	0.647	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	5.05	J	ng/l	5.95	2.01	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.975	J	ng/l	1.49	0.402	1
Perfluorononanoic Acid (PFNA)	9.91		ng/l	1.49	0.469	1
Perfluorooctanesulfonic Acid (PFOS)	73.6		ng/l	1.49	0.677	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.49	0.603	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.95	2.31	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.49	0.461	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.49	0.811	1
Perfluoroundecanoic Acid (PFUnA)	2.26		ng/l	1.49	0.647	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.49	0.342	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.49	0.402	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.49	0.804	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.49	0.685	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.49	0.558	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.49	0.394	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.95	0.833	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.95	0.938	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.49	0.566	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-16 Date Collected: 06/11/24 14:20

Client ID: MW-3D Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.95	1.23	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.95	1.23	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.49	0.647	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.49	0.685	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.9	3.50	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.9	1.82	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.98	0.424	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.98	0.394	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.98	0.327	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.98	1.76	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.44	2.46	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.2	8.71	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.2	5.87	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-16 Date Collected: 06/11/24 14:20

Client ID: MW-3D Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	90		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	95		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	93		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	100		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	90		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	99		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	91		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	89		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	98		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	86		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	87		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	77		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	67		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	71		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	79		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	88		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	77		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	90		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	88		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	98		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	73		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	79		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	93		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	94		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-17
Client ID: PFW-3
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 08:45
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 18:04
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	420		ng/l	6.38	1.02	1
Perfluoropentanoic Acid (PFPeA)	746		ng/l	3.19	0.854	1
Perfluorobutanesulfonic Acid (PFBS)	12.2		ng/l	1.60	0.535	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.38	1.67	1
Perfluorohexanoic Acid (PFHxA)	378		ng/l	1.60	0.471	1
Perfluoropentanesulfonic Acid (PFPeS)	33.6		ng/l	1.60	0.279	1
Perfluoroheptanoic Acid (PFHpA)	214		ng/l	1.60	0.319	1
Perfluorohexanesulfonic Acid (PFHxS)	514	E	ng/l	1.60	0.383	1
Perfluorooctanoic Acid (PFOA)	133		ng/l	1.60	0.694	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	23.9		ng/l	6.38	2.15	1
Perfluoroheptanesulfonic Acid (PFHpS)	4.04		ng/l	1.60	0.431	1
Perfluorononanoic Acid (PFNA)	43.2		ng/l	1.60	0.503	1
Perfluorooctanesulfonic Acid (PFOS)	310		ng/l	1.60	0.726	1
Perfluorodecanoic Acid (PFDA)	5.74		ng/l	1.60	0.646	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	4.67	J	ng/l	6.38	2.48	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.495	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.870	1
Perfluoroundecanoic Acid (PFUnA)	17.3		ng/l	1.60	0.694	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.367	1
Perfluorooctanesulfonamide (PFOSA)	1.33	JF	ng/l	1.60	0.431	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.862	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.734	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.598	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.423	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.38	0.894	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.38	1.00	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.606	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-17 Date Collected: 06/11/24 08:45

Client ID: PFW-3 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.38	1.32	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.38	1.32	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.694	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.734	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.75	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.19	0.455	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.19	0.423	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.19	0.351	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.19	1.88	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.98	2.63	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	39.9	9.34	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	39.9	6.30	1

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-17 Date Collected: 06/11/24 08:45

Client ID: PFW-3 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	89		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	76		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	88		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	138		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	85		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	99		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	85		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	86		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	108		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	82		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	84		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	79		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	76		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	66		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	80		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	88		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	73		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	82		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	79		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	101		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	69		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	72		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	84		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	83		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-17 D
Client ID: PFW-3
Sample Location: 155 S. FLINT ROCK ROAD

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 22:55
Analyst: JW

Date Collected: 06/11/24 08:45
Date Received: 06/12/24
Field Prep: Not Specified

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorohexanesulfonic Acid (PFHxS)	479		ng/l	7.98	1.92	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	72		46-115

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 07/01/24 12:44
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-11,13-17 Batch: WG1941542-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.40	1.02
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.20	0.856
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.60	0.536
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.40	1.67
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.60	0.472
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.60	0.280
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.60	0.320
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.60	0.384
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.60	0.696
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.40	2.16
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.60	0.432
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.60	0.504
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.60	0.728
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.648
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.40	2.49
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.496
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.872
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.696
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.368
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.432
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.864
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.736
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.600
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.424
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.40	0.896
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.40	1.01

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432894
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 07/01/24 12:44
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-11,13-17 Batch: WG1941542-1					
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.608
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.40	1.32
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.40	1.32
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.696
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.736
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.76
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.456
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.424
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.352
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	1.89
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.00	2.64
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.0	9.36
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.0	6.31

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432894
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 07/01/24 12:44
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 07/01/24 06:55

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-11,13-17 Batch: WG1941542-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	91		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	100		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	84		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	103		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	84		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	75		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	75		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	78		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	63		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	57		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	51		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	60		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	69		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	54		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	75		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	80		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	57		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	56		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	90		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	57		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	57		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	81		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	79		10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432894
Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-11,13-17 Batch: WG1941542-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	120		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	108		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	99		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	108		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	105		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	108		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	100		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	106		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	116		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	114		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	105		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	102		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	107		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	108		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	116		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	97		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	106		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	105		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	106		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	98		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	107		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	104		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432894

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-11,13-17 Batch: WG1941542-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	101		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	108		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	103		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	113		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	87		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	120		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	107		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	109		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	88		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	108		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	112		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	122		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	94		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	113		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	126		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	98		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	103		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	82		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432894

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-11,13-17 Batch: WG1941542-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	91				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	100				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	90				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	93				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	85				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	97				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	88				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	86				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	91				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	90				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	86				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	82				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	84				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	99				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	88				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	92				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	107				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	91				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	92				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	61				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	65				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	93				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	94				10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432894
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-11,13-17 Batch: WG1941542-3								
Perfluorobutanoic Acid (PFBA)	99		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	99		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	99		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	98		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	108		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	109		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	98		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	98		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	92		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	101		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	94		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	91		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	92		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	94		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	98		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	90		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	99		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	100		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	96		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	100		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	92		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	104		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432894
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-11,13-17 Batch: WG1941542-3								
Perfluorotridecanoic Acid (PFTrDA)	105		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	103		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	99		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	100		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	79		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	110		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	103		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	114		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	100		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	114		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	110		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	110		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	91		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	100		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	121		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	97		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	97		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	90		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432894

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-11,13-17 Batch: WG1941542-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	87				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	91				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	85				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	104				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	80				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	84				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	84				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	94				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	90				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	87				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	106				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	89				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	86				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	80				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	92				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	82				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	73				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	86				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	59				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	65				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	82				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	84				10-130

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432894
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-11,13-17 QC Batch ID: WG1941542-4 WG1941542-5 QC Sample: L2432894-01 Client ID: FS1-A												
Perfluorobutanoic Acid (PFBA)	201	71.1	273	101		276	101		40-150	1		30
Perfluoropentanoic Acid (PFPeA)	705	35.6	725	56		715	**27**	Q	40-150	1		30
Perfluorobutanesulfonic Acid (PFBS)	85.4	15.8	97.2	75		99.8	87		40-150	3		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	66.7	62.1	93		66.1	95		40-150	6		30
Perfluorohexanoic Acid (PFHxA)	787E	17.8	805E	101		821E	**183**	Q	40-150	2		30
Perfluoropentanesulfonic Acid (PFPeS)	150	16.7	180	**179**	Q	177	**154**	Q	40-150	2		30
Perfluoroheptanoic Acid (PFHpA)	440	17.8	476E	**202**	Q	457	91		40-150	4		30
Perfluorohexanesulfonic Acid (PFHxS)	3250E	16.2	3300E	**308**	Q	3300E	**294**	Q	40-150	0		30
Perfluorooctanoic Acid (PFOA)	1360E	17.8	1380E	112		1370E	54		40-150	1		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	25.6	67.6	96.6	105		93.3	96		40-150	3		30
Perfluoroheptanesulfonic Acid (PFHpS)	50.6	16.9	81.4	**182**	Q	74.3	134		40-150	9		30
Perfluorononanoic Acid (PFNA)	99.2	17.8	118	106		118	101		40-150	0		30
Perfluorooctanesulfonic Acid (PFOS)	2760E	16.5	2840E	**485**	Q	2710E	**0**	Q	40-150	5		30
Perfluorodecanoic Acid (PFDA)	35.0	17.8	49.3	80		51.8	90		40-150	5		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	21.1	68.3	94.4	107		98.8	109		40-150	5		30
Perfluorononanesulfonic Acid (PFNS)	ND	17.1	26.4	**154**	Q	26.1	146		40-150	1		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	17.8	25.9	146		27.1	146		40-150	5		30
Perfluoroundecanoic Acid (PFUnA)	160	17.8	182	124		185	134		40-150	2		30
Perfluorodecanesulfonic Acid (PFDS)	2.58	17.2	26.7	141		25.3	127		40-150	5		30
Perfluorooctanesulfonamide (PFOSA)	105	17.8	136	**174**	Q	136	**167**	Q	40-150	0		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	17.8	19.8	111		19.8	106		40-150	0		30
Perfluorododecanoic Acid (PFDoA)	0.894J	17.8	22.1	119		21.0	108		40-150	5		30

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-11,13-17 QC Batch ID: WG1941542-4 WG1941542-5 QC Sample: L2432894-01 Client ID: FS1-A												
Perfluorotridecanoic Acid (PFTrDA)	1.82	17.8	22.9	119		22.4	111		40-150	2		30
Perfluorotetradecanoic Acid (PFTeDA)	ND	17.8	20.1	113		21.2	114		40-150	5		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	71.1	70.2	99		71.6	96		40-150	2		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	67.2	75.5	112		76.1	108		40-150	1		30
Perfluorododecanesulfonic Acid (PFDoS)	ND	17.2	19.8	115		18.8	104		40-150	5		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	66.5	76.1	114		76.6	110		40-150	1		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	67.2	65.6	98		66.9	95		40-150	2		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	17.8	22.0	124		22.5	121		40-150	2		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	17.8	21.0	118		20.1	108		40-150	4		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	178	222	125		223	120		40-150	0		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	178	223	125		225	121		40-150	1		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	35.6	81.8	**230**	Q	79.2	**213**	Q	40-150	3		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	35.6	40.0	112		38.6	104		40-150	4		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	31.6	40.8	129		40.7	123		40-150	0		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	35.6	43.3	122		40.8	110		40-150	6		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	88.9	103	116		99.4	107		40-150	4		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	444	606	136		612	132		40-150	1		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	444	635	143		624	134		40-150	2		30

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432894
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-11,13-17 QC Batch ID: WG1941542-4 WG1941542-5 QC Sample: L2432894-01 Client ID: FS1-A												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	**221**	Q	**216**	Q	10-213
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	285		277		10-290
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	**281**	Q	**283**	Q	10-261
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	88		90		11-97
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	**151**	Q	150		10-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	98		100		10-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	89		89		11-94
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	106		109		10-172
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	101		101		10-137
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	85		87		46-115
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	**113**	Q	**110**	Q	14-108
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	85		89		32-114
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	117		116		41-125
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	72		70		16-123
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	79		71		28-115
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	85		90		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	106		115		27-156
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	76		76		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	76		70		10-145
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	87		89		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	76		82		29-123
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	82		87		39-121
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	86		81		38-114

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432894

Report Date: 08/13/24

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-11,13-17 QC Batch ID: WG1941542-4 WG1941542-5 QC Sample: L2432894-01 Client ID: FS1-A												

Surrogate	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	107		113		35-142

PETROLEUM HYDROCARBONS

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-01
Client ID: FS1-A
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/10/24 14:50
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 131,VPH-18-2.1
Analytical Date: 06/18/24 15:45
Analyst: BAD

Trap: EST, Carbopack B/Carboxen 1000&1001
Analytical Column: Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received: Satisfactory
Aqueous Preservative: Laboratory Provided Preserved Container
Sample Temperature upon receipt: Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	100	100.	1
C9-C12 Aliphatics	187		ug/l	100	100.	1
C9-C10 Aromatics	146		ug/l	100	100.	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	100	100.	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	100	100.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	123		70-130
2,5-Dibromotoluene-FID	109		70-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID:	L2432894-01			Date Collected:	06/10/24 14:50
Client ID:	FS1-A			Date Received:	06/12/24
Sample Location:	155 S. FLINT ROCK ROAD			Field Prep:	Not Specified
Sample Depth:					
Matrix:	Water			Extraction Method:	EPA 3510C
Analytical Method:	135,EPH-19-2.1			Extraction Date:	06/18/24 23:57
Analytical Date:	06/19/24 14:05	M.S. Analytical Date:	06/20/24 13:46	Cleanup Method1:	EPH-19-2.1
Analyst:	MTC	M.S. Analyst:	JJW	Cleanup Date1:	06/19/24

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/Targets via GCMS-SIM - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	100.	1
C19-C36 Aliphatics	ND		ug/l	100	100.	1
C11-C22 Aromatics	361		ug/l	100	100.	1
C11-C22 Aromatics, Adjusted	322		ug/l	100	100.	1
Naphthalene	0.276	J	ug/l	0.400	0.136	1
2-Methylnaphthalene	33.7		ug/l	0.400	0.077	1
Acenaphthylene	0.324	J	ug/l	0.400	0.054	1
Acenaphthene	1.23		ug/l	0.400	0.091	1
Fluorene	2.14		ug/l	0.400	0.097	1
Phenanthrene	1.86		ug/l	0.400	0.084	1
Anthracene	ND		ug/l	0.400	0.079	1
Fluoranthene	ND		ug/l	0.400	0.121	1
Pyrene	ND		ug/l	0.400	0.114	1
Benzo(a)anthracene	ND		ug/l	0.400	0.088	1
Chrysene	ND		ug/l	0.400	0.102	1
Benzo(b)fluoranthene	ND		ug/l	0.400	0.102	1
Benzo(k)fluoranthene	ND		ug/l	0.400	0.126	1
Benzo(a)pyrene	ND		ug/l	0.200	0.072	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	0.095	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	0.091	1
Benzo(ghi)perylene	ND		ug/l	0.400	0.102	1

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-01
Client ID: FS1-A
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/10/24 14:50
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/Targets via GCMS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	52		40-140
o-Terphenyl	74		40-140
2-Fluorobiphenyl	77		40-140
2-Bromonaphthalene	79		40-140
O-Terphenyl-MS	44		40-140

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-12
Client ID: MW-2
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/11/24 14:45
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 131,VPH-18-2.1
Analytical Date: 06/18/24 16:16
Analyst: BAD

Trap: EST, Carbopack B/Carboxen 1000&1001
Analytical Column: Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received: Satisfactory
Aqueous Preservative: Laboratory Provided Preserved Container
Sample Temperature upon receipt: Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	100	100.	1
C9-C12 Aliphatics	ND		ug/l	100	100.	1
C9-C10 Aromatics	ND		ug/l	100	100.	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	100	100.	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	100	100.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	122		70-130
2,5-Dibromotoluene-FID	119		70-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID:	L2432894-12			Date Collected:	06/11/24 14:45
Client ID:	MW-2			Date Received:	06/12/24
Sample Location:	155 S. FLINT ROCK ROAD			Field Prep:	Not Specified
Sample Depth:					
Matrix:	Water			Extraction Method:	EPA 3510C
Analytical Method:	135,EPH-19-2.1			Extraction Date:	06/18/24 23:57
Analytical Date:	06/19/24 14:30	M.S. Analytical Date:	06/20/24 14:03	Cleanup Method1:	EPH-19-2.1
Analyst:	MTC	M.S. Analyst:	JJW	Cleanup Date1:	06/19/24

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/Targets via GCMS-SIM - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	100.	1
C19-C36 Aliphatics	ND		ug/l	100	100.	1
C11-C22 Aromatics	ND		ug/l	100	100.	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	100.	1
Naphthalene	0.158	J	ug/l	0.400	0.136	1
2-Methylnaphthalene	ND		ug/l	0.400	0.077	1
Acenaphthylene	ND		ug/l	0.400	0.054	1
Acenaphthene	ND		ug/l	0.400	0.091	1
Fluorene	ND		ug/l	0.400	0.097	1
Phenanthrene	ND		ug/l	0.400	0.084	1
Anthracene	ND		ug/l	0.400	0.079	1
Fluoranthene	ND		ug/l	0.400	0.121	1
Pyrene	ND		ug/l	0.400	0.114	1
Benzo(a)anthracene	ND		ug/l	0.400	0.088	1
Chrysene	ND		ug/l	0.400	0.102	1
Benzo(b)fluoranthene	ND		ug/l	0.400	0.102	1
Benzo(k)fluoranthene	ND		ug/l	0.400	0.126	1
Benzo(a)pyrene	ND		ug/l	0.200	0.072	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	0.095	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	0.091	1
Benzo(ghi)perylene	ND		ug/l	0.400	0.102	1

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-12
Client ID: MW-2
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/11/24 14:45
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/Targets via GCMS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	51		40-140
o-Terphenyl	79		40-140
2-Fluorobiphenyl	80		40-140
2-Bromonaphthalene	81		40-140
O-Terphenyl-MS	46		40-140

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-13
Client ID: MW-10
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/11/24 15:15
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 131,VPH-18-2.1
Analytical Date: 06/18/24 16:46
Analyst: BAD

Trap: EST, Carbopack B/Carboxen 1000&1001
Analytical Column: Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received: Satisfactory
Aqueous Preservative: Laboratory Provided Preserved Container
Sample Temperature upon receipt: Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	100	100.	1
C9-C12 Aliphatics	ND		ug/l	100	100.	1
C9-C10 Aromatics	ND		ug/l	100	100.	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	100	100.	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	100	100.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	114		70-130
2,5-Dibromotoluene-FID	112		70-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID:	L2432894-13			Date Collected:	06/11/24 15:15
Client ID:	MW-10			Date Received:	06/12/24
Sample Location:	155 S. FLINT ROCK ROAD			Field Prep:	Not Specified
Sample Depth:					
Matrix:	Water			Extraction Method:	EPA 3510C
Analytical Method:	135,EPH-19-2.1			Extraction Date:	06/18/24 23:57
Analytical Date:	06/19/24 14:55	M.S. Analytical Date:	06/20/24 14:19	Cleanup Method1:	EPH-19-2.1
Analyst:	MTC	M.S. Analyst:	JJW	Cleanup Date1:	06/19/24

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/Targets via GCMS-SIM - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	100.	1
C19-C36 Aliphatics	ND		ug/l	100	100.	1
C11-C22 Aromatics	ND		ug/l	100	100.	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	100.	1
Naphthalene	ND		ug/l	0.400	0.136	1
2-Methylnaphthalene	ND		ug/l	0.400	0.077	1
Acenaphthylene	ND		ug/l	0.400	0.054	1
Acenaphthene	ND		ug/l	0.400	0.091	1
Fluorene	0.180	J	ug/l	0.400	0.097	1
Phenanthrene	ND		ug/l	0.400	0.084	1
Anthracene	ND		ug/l	0.400	0.079	1
Fluoranthene	ND		ug/l	0.400	0.121	1
Pyrene	ND		ug/l	0.400	0.114	1
Benzo(a)anthracene	ND		ug/l	0.400	0.088	1
Chrysene	ND		ug/l	0.400	0.102	1
Benzo(b)fluoranthene	ND		ug/l	0.400	0.102	1
Benzo(k)fluoranthene	ND		ug/l	0.400	0.126	1
Benzo(a)pyrene	ND		ug/l	0.200	0.072	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	0.095	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	0.091	1
Benzo(ghi)perylene	ND		ug/l	0.400	0.102	1

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-13
Client ID: MW-10
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/11/24 15:15
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/Targets via GCMS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	67		40-140
o-Terphenyl	78		40-140
2-Fluorobiphenyl	78		40-140
2-Bromonaphthalene	81		40-140
O-Terphenyl-MS	47		40-140

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-14
Client ID: MW-3S
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/11/24 16:15
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 131,VPH-18-2.1
Analytical Date: 06/18/24 17:16
Analyst: BAD

Trap: EST, Carbopack B/Carboxen 1000&1001
Analytical Column: Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received: Satisfactory
Aqueous Preservative: Laboratory Provided Preserved Container
Sample Temperature upon receipt: Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	100	100.	1
C9-C12 Aliphatics	201		ug/l	100	100.	1
C9-C10 Aromatics	148		ug/l	100	100.	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	100	100.	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	100	100.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	118		70-130
2,5-Dibromotoluene-FID	114		70-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID:	L2432894-14			Date Collected:	06/11/24 16:15
Client ID:	MW-3S			Date Received:	06/12/24
Sample Location:	155 S. FLINT ROCK ROAD			Field Prep:	Not Specified
Sample Depth:					
Matrix:	Water			Extraction Method:	EPA 3510C
Analytical Method:	135,EPH-19-2.1			Extraction Date:	06/18/24 23:57
Analytical Date:	06/19/24 15:20	M.S. Analytical Date:	06/20/24 14:36	Cleanup Method1:	EPH-19-2.1
Analyst:	MTC	M.S. Analyst:	JJW	Cleanup Date1:	06/19/24

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

EPH w/Targets via GCMS-SIM - Westborough Lab

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
C9-C18 Aliphatics	ND		ug/l	100	100.	1
C19-C36 Aliphatics	ND		ug/l	100	100.	1
C11-C22 Aromatics	413		ug/l	100	100.	1
C11-C22 Aromatics, Adjusted	370		ug/l	100	100.	1
Naphthalene	16.4		ug/l	0.400	0.136	1
2-Methylnaphthalene	21.8		ug/l	0.400	0.077	1
Acenaphthylene	0.256	J	ug/l	0.400	0.054	1
Acenaphthene	1.05		ug/l	0.400	0.091	1
Fluorene	1.76		ug/l	0.400	0.097	1
Phenanthrene	1.91		ug/l	0.400	0.084	1
Anthracene	ND		ug/l	0.400	0.079	1
Fluoranthene	ND		ug/l	0.400	0.121	1
Pyrene	ND		ug/l	0.400	0.114	1
Benzo(a)anthracene	ND		ug/l	0.400	0.088	1
Chrysene	ND		ug/l	0.400	0.102	1
Benzo(b)fluoranthene	ND		ug/l	0.400	0.102	1
Benzo(k)fluoranthene	ND		ug/l	0.400	0.126	1
Benzo(a)pyrene	ND		ug/l	0.200	0.072	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	0.095	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	0.091	1
Benzo(ghi)perylene	ND		ug/l	0.400	0.102	1

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432894-14
Client ID: MW-3S
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/11/24 16:15
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/Targets via GCMS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	54		40-140
o-Terphenyl	85		40-140
2-Fluorobiphenyl	87		40-140
2-Bromonaphthalene	88		40-140
O-Terphenyl-MS	48		40-140

Project Name: BARNSTABLE **Lab Number:** L2432894

Project Number: 01.0177641.00 **Report Date:** 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 135,EPH-19-2.1
Analytical Date: 06/19/24 00:57
Analyst: CRE

M.S. Analytical Date: 06/19/24 11:33
M.S. Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 06/18/24 15:49
Cleanup Method: EPH-19-2.1
Cleanup Date: 06/18/24

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/Targets via GCMS-SIM - Westborough Lab for sample(s): 01,12-14 Batch: WG1936004-1					
C9-C18 Aliphatics	ND		ug/l	100	100.
C19-C36 Aliphatics	ND		ug/l	100	100.
C11-C22 Aromatics	ND		ug/l	100	100.
C11-C22 Aromatics, Adjusted	ND		ug/l	100	100.
Naphthalene	ND		ug/l	0.400	0.136
2-Methylnaphthalene	ND		ug/l	0.400	0.077
Acenaphthylene	ND		ug/l	0.400	0.054
Acenaphthene	ND		ug/l	0.400	0.091
Fluorene	ND		ug/l	0.400	0.097
Phenanthrene	ND		ug/l	0.400	0.084
Anthracene	ND		ug/l	0.400	0.079
Fluoranthene	ND		ug/l	0.400	0.121
Pyrene	ND		ug/l	0.400	0.114
Benzo(a)anthracene	ND		ug/l	0.400	0.088
Chrysene	ND		ug/l	0.400	0.102
Benzo(b)fluoranthene	ND		ug/l	0.400	0.102
Benzo(k)fluoranthene	ND		ug/l	0.400	0.126
Benzo(a)pyrene	ND		ug/l	0.200	0.072
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	0.095
Dibenzo(a,h)anthracene	ND		ug/l	0.400	0.091
Benzo(ghi)perylene	ND		ug/l	0.400	0.102

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432894
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 135,EPH-19-2.1
Analytical Date: 06/19/24 00:57
Analyst: CRE

M.S. Analytical Date: 06/19/24 11:33
M.S. Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 06/18/24 15:49
Cleanup Method: EPH-19-2.1
Cleanup Date: 06/18/24

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/Targets via GCMS-SIM - Westborough Lab for sample(s): 01,12-14 Batch: WG1936004-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	70		40-140
o-Terphenyl	72		40-140
2-Fluorobiphenyl	78		40-140
2-Bromonaphthalene	80		40-140
O-Terphenyl-MS	47		40-140

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432894
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 131,VPH-18-2.1
Analytical Date: 06/18/24 11:30
Analyst: BAD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 01,12-14 Batch: WG1936391-4					
C5-C8 Aliphatics	ND		ug/l	100	100.
C9-C12 Aliphatics	ND		ug/l	100	100.
C9-C10 Aromatics	ND		ug/l	100	100.
C5-C8 Aliphatics, Adjusted	ND		ug/l	100	100.
C9-C12 Aliphatics, Adjusted	ND		ug/l	100	100.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	110		70-130
2,5-Dibromotoluene-FID	108		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432894
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/Targets via GCMS-SIM - Westborough Lab Associated sample(s): 01,12-14 Batch: WG1936004-2 WG1936004-3								
C9-C18 Aliphatics	51		54		40-140	6		20
C19-C36 Aliphatics	74		76		40-140	3		20
C11-C22 Aromatics	79		87		40-140	10		20
Naphthalene	64		69		40-140	8		20
2-Methylnaphthalene	76		81		40-140	6		20
Acenaphthylene	77		81		40-140	5		20
Acenaphthene	64		70		40-140	9		20
Fluorene	79		84		40-140	6		20
Phenanthrene	68		74		40-140	8		20
Anthracene	81		86		40-140	6		20
Fluoranthene	72		76		40-140	5		20
Pyrene	68		72		40-140	6		20
Benzo(a)anthracene	100		106		40-140	6		20
Chrysene	81		87		40-140	7		20
Benzo(b)fluoranthene	90		97		40-140	7		20
Benzo(k)fluoranthene	82		88		40-140	7		20
Benzo(a)pyrene	101		109		40-140	8		20
Indeno(1,2,3-cd)Pyrene	126		134		40-140	6		20
Dibenzo(a,h)anthracene	96		105		40-140	9		20
Benzo(ghi)perylene	81		86		40-140	6		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432894
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/Targets via GCMS-SIM - Westborough Lab Associated sample(s): 01,12-14 Batch: WG1936004-2 WG1936004-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	67		72		40-140
o-Terphenyl	82		90		40-140
2-Fluorobiphenyl	82		93		40-140
2-Bromonaphthalene	82		96		40-140
O-Terphenyl-MS	72		76		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432894
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01,12-14 Batch: WG1936391-2 WG1936391-3								
C5-C8 Aliphatics	97		98		70-130	1		25
C9-C12 Aliphatics	109		109		70-130	0		25
C9-C10 Aromatics	111		110		70-130	1		25
Benzene	104		106		70-130	2		25
Toluene	104		105		70-130	1		25
Ethylbenzene	110		110		70-130	0		25
p/m-Xylene	110		110		70-130	0		25
o-Xylene	112		111		70-130	1		25
Methyl tert butyl ether	111		112		70-130	1		25
Naphthalene	124		124		70-130	0		25
1,2,4-Trimethylbenzene	111		110		70-130	1		25
Pentane	100		101		70-130	1		25
2-Methylpentane	98		100		70-130	1		25
2,2,4-Trimethylpentane	97		98		70-130	2		25
n-Nonane	106		108		30-130	2		25
n-Decane	114		115		70-130	1		25
n-Butylcyclohexane	106		106		70-130	0		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	**137**	Q	**134**	Q	70-130
2,5-Dibromotoluene-FID	**133**	Q	130		70-130

Project Name: BARNSTABLE
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Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent
D	Absent
E	Absent
F	Absent
G	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2432894-01A	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432894-01B	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432894-01C	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432894-01D	Amber 1000ml HCl preserved	C	<2	<2	3.5	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2432894-01E	Amber 1000ml HCl preserved	C	<2	<2	3.5	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2432894-01F	Vial HCl preserved	C	NA		3.5	Y	Absent		VPH-18(14)
L2432894-01G	Vial HCl preserved	C	NA		3.5	Y	Absent		VPH-18(14)
L2432894-01H	Vial HCl preserved	C	NA		3.5	Y	Absent		VPH-18(14)
L2432894-01I	Vial HCl preserved	C	NA		3.5	Y	Absent		MCP-8260-21(14)
L2432894-01J	Vial HCl preserved	C	NA		3.5	Y	Absent		MCP-8260-21(14)
L2432894-01K	Vial HCl preserved	C	NA		3.5	Y	Absent		MCP-8260-21(14)
L2432894-02A	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432894-02B	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432894-02C	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432894-03A	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432894-03B	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2432894-03C	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432894-04A	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432894-04B	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432894-04C	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432894-05A	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432894-05B	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432894-05C	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432894-06A	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432894-06B	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432894-06C	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432894-07A	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432894-07B	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432894-07C	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432894-08A	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432894-08B	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432894-08C	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432894-09A	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432894-09B	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432894-09C	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432894-10A	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432894-10B	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432894-10C	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432894-11A	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432894-11B	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432894-11C	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432894-12D	Amber 1000ml HCl preserved	E	<2	<2	5.9	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2432894-12E	Amber 1000ml HCl preserved	E	<2	<2	5.9	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2432894-12F	Vial HCl preserved	E	NA		5.9	Y	Absent		VPH-18(14)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2432894-12G	Vial HCl preserved	E	NA		5.9	Y	Absent		VPH-18(14)
L2432894-12H	Vial HCl preserved	E	NA		5.9	Y	Absent		VPH-18(14)
L2432894-12I	Vial HCl preserved	E	NA		5.9	Y	Absent		MCP-8260-21(14)
L2432894-12J	Vial HCl preserved	E	NA		5.9	Y	Absent		MCP-8260-21(14)
L2432894-12K	Vial HCl preserved	E	NA		5.9	Y	Absent		MCP-8260-21(14)
L2432894-13A	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432894-13B	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432894-13C	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432894-13D	Amber 1000ml HCl preserved	E	<2	<2	5.9	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2432894-13E	Amber 1000ml HCl preserved	E	<2	<2	5.9	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2432894-13F	Vial HCl preserved	E	NA		5.9	Y	Absent		VPH-18(14)
L2432894-13G	Vial HCl preserved	E	NA		5.9	Y	Absent		VPH-18(14)
L2432894-13H	Vial HCl preserved	E	NA		5.9	Y	Absent		VPH-18(14)
L2432894-13I	Vial HCl preserved	E	NA		5.9	Y	Absent		MCP-8260-21(14)
L2432894-13J	Vial HCl preserved	E	NA		5.9	Y	Absent		MCP-8260-21(14)
L2432894-13K	Vial HCl preserved	E	NA		5.9	Y	Absent		MCP-8260-21(14)
L2432894-14A	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432894-14B	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432894-14C	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432894-14D	Amber 1000ml HCl preserved	E	<2	<2	5.9	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2432894-14E	Amber 1000ml HCl preserved	E	<2	<2	5.9	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2432894-14F	Vial HCl preserved	E	NA		5.9	Y	Absent		VPH-18(14)
L2432894-14G	Vial HCl preserved	E	NA		5.9	Y	Absent		VPH-18(14)
L2432894-14H	Vial HCl preserved	E	NA		5.9	Y	Absent		VPH-18(14)
L2432894-14I	Vial HCl preserved	E	NA		5.9	Y	Absent		MCP-8260-21(14)
L2432894-14J	Vial HCl preserved	E	NA		5.9	Y	Absent		MCP-8260-21(14)
L2432894-14K	Vial HCl preserved	E	NA		5.9	Y	Absent		MCP-8260-21(14)
L2432894-15A	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2432894-15B	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432894-15C	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432894-16A	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432894-16B	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432894-16C	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432894-17A	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432894-17B	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432894-17C	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

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PFAS PARAMETER SUMMARY

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

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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:	BARNSTABLE	**Lab Number:**	L2432894
Project Number:	01.0177641.00	**Report Date:**	08/13/24

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

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

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

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

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

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

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

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

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2432894
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2432894
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

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

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

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration 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:	BARNSTABLE	**Lab Number:**	L2432894
Project Number:	01.0177641.00	**Report Date:**	08/13/24

REFERENCES

131 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, February 2018, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, June 1, 2018.

135 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, December 2019, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, March 1, 2020.

141 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA and IIB, November 2021.

144 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. Draft EPA Method 1633, EPA Document 821-D-22-001, June 2022.

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

Mansfield Facility
SM 2540D: TSS.
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.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

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

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, 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 2

Date Rec'd in Lab: 6/14/24

ALPHA Job #: L2432894

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: GZA GeoEnvironmental, Inc.
Address: 249 Vanderbilt Avenue
Norwood, MA 02062
Phone: 781-589-3866
Fax: 781-278-5701
Email: Jennifer.McKechnie@gza.com; Rowan.Thompson@gza.com; Flora.Su@gza.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Barnstable
Project Location: 155 S. Flint Rock Rd
Project #: 01.0177641.00
Project Manager: Jennifer McKechnie
ALPHA Quote #: 27478

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria
MA MCP Method 1	GW-1

Other Project Specific Requirements/Comments/Detection Limits:
① Use MA MCP analytical methods where applicable.

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS: EPA 1633	VOCs: EPA 8260	MADEP VPH (fractions only)	MADEP EPH SIM (fractions + targets)	Sample Specific Comments	TOTAL # BOTTLES
32894 -01	FS1-A	06/10/24	14:50	GW	OLB	x	x	x	x		11
-02	FS1-B	06/10/24	13:50	GW	OLB	x					3
-03	FS1-C	06/10/24	12:50	GW	OLB	x					3
-04	MW-2Φ1	06/10/24	11:10	GW	OLB	x					3
-05	MW-3Φ2	06/10/24	13:15	GW	FKS	x					3
-06	MW-3Φ3	06/10/24	15:45	GW	NCL	x					3
-07	MW-3Φ4	06/10/24	14:00	GW	VER	x					3
-08	MW-3Φ6	06/10/24	12:40	GW	NCL	x					3
-09	MW-31Φ	06/10/24	15:10	GW	VER	x					3
-10	MW-4Φ5	06/10/24	18:10	GW	NCL	x					3
	Container Type	P	V	V	A						
	Preservative	A	B	B	B						

SAMPLE HANDLING
Filtration
☐ Done ☐ Not needed ☐ Lab to do
Preservation
☐ Lab to do (Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
Flora Su	06/12/24 11:25		
	6-12-24 15:25		6-12-24 1525
	6/14/24 15:00		6/14/24 (AM)
	6/14/24 17:00		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 6/14/24

ALPHA Job #: L2432194

8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: GZA GeoEnvironmental Inc.
Address: 249 Vanderbilt Ave
Norwood, MA 02062
Phone: 781-589-3866
Email: jennifer.mckechnie@gza.com
flora.su@gza.com
rowan.thompson@gza.com

Additional Project Information:

Project Information

Project Name: Barnstable
Project Location: 155 S Flint Rock Rd
Project #: 01.0177641.00
Project Manager: Jennifer McKechnie
ALPHA Quote #: 27478

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☒ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	ANALYSIS: VOC: ☒ 8260 ☐ 624	SVOC: ☐ 8270 ☐ 625 ☐ ABN	METALS: ☐ MCP 13	METALS: ☐ MCP 14 ☐ RCRA5 ☐ RCRA8	EPH: ☐ RCP 15 ☐ PP13 ☒ Ranges & Targets	VPH: ☐ Ranges Only ☐ Ranges & Targets	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint ☒ Ranges Only	PFAS: EPA 1633	SAMPLE INFO: Filtration ☐ Field ☐ Lab to do; Preservation ☐ Lab to do; Sample Comments	TOTAL # BOTTLES
-11	MW-406	06/11/24	12:20	GW	KC											3
-12	MW-2	06/11/24	14:45	GW	FKS	X				X X						8
-13	MW-10	06/11/24	15:15	GW	OLB	X				X X			X			11
-14	MW-35	06/11/24	16:15	GW	NCL	X				X X			X			11
-15	MW-3I	06/11/24	13:00	GW	NCL								X			3
-16	MW-3D	06/11/24	14:20	GW	NCL								X			3
-17	PFW-3	06/11/24	08:45	GW	VEK								X			3
Container Type						V				A V			P			
Preservative						B				B B			A			

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H= $Na_2S_2O_3$
I= Ascorbic Acid
J= NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Flora Su	06/12/24 1130		
DAVIS	6-12-24/15:20	DAVIS	6/12/24 11:30
Riley Frothingham	6/14/24 13:00		6/12/24 1520
			6/14/24 1PW

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

Method Blank Summary
Form 4
Volatiles

Client	: GZA GeoEnvironmental, Inc.	**Lab Number**	: L2432894
Project Name	: BARNSTABLE	**Project Number**	: 01.0177641.00
Lab Sample ID	: WG1936533-5	**Lab File ID**	: V16240619A07
Instrument ID	: VOA116		
Matrix	: WATER	**Analysis Date**	: 06/19/24 06:16

Client Sample No.	Lab Sample ID	Analysis Date
WG1936533-3LCS	WG1936533-3	06/19/24 04:42
WG1936533-4LCSD	WG1936533-4	06/19/24 05:06
FS1-A	L2432894-01	06/19/24 07:03
MW-2	L2432894-12	06/19/24 07:51
MW-10	L2432894-13	06/19/24 08:38
MW-3S	L2432894-14	06/19/24 09:02

Calibration Verification Summary
Form 7
Volatiles

Client	: GZA GeoEnvironmental, Inc.		**Lab Number**	: L2432894	
Project Name	: BARNSTABLE		**Project Number**	: 01.0177641.00	
Instrument ID	: VOA116		**Calibration Date**	: 06/19/24 04:42	
Lab File ID	: V16240619A03		**Init. Calib. Date(s)**	: 05/31/24	06/01/24
Sample No	: WG1936533-2		**Init. Calib. Times**	: 23:29	03:27
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	79	0
Dichlorodifluoromethane	0.197	0.165	-	16.2	20	60	0
Chloromethane	0.141	0.144	-	-2.1	20	78	0
Vinyl chloride	0.246	0.243	-	1.2	20	71	0
Bromomethane	0.141	0.127	-	9.9	20	77	0
Chloroethane	0.18	0.17	-	5.6	20	69	0
Trichlorofluoromethane	0.265	0.271	-	-2.3	20	75	0
Ethyl ether	0.06	0.063	-	-5	20	83	0
1,1-Dichloroethene	0.134	0.135	-	-0.7	20	76	0
Carbon disulfide	0.44	0.45	-	-2.3	20	78	0
Freon-113	0.154	0.156	-	-1.3	20	75	0
Acrolein	0.015	0.013	-	13.3	20	74	0
Methylene chloride	0.175	0.164	-	6.3	20	79	0
Acetone	0.024	0.028	-	-16.7	20	91	0
trans-1,2-Dichloroethene	0.148	0.148	-	0	20	77	0
Methyl acetate	0.057	0.065	-	-14	20	97	0
Methyl tert-butyl ether	0.27	0.271	-	-0.4	20	84	0
tert-Butyl alcohol	0.00456	0.00509*	-	-11.6	20	86	0
Diisopropyl ether	0.382	0.429	-	-12.3	20	90	0
1,1-Dichloroethane	0.264	0.294*	-	-11.4	20	84	0
Halothane	0.122	0.122	-	0	20	75	0
Acrylonitrile	0.029	0.031	-	-6.9	20	82	0
Ethyl tert-butyl ether	0.333	0.351	-	-5.4	20	95	0
Vinyl acetate	0.227	0.251	-	-10.6	20	104	0
cis-1,2-Dichloroethene	0.162	0.164*	-	-1.2	20	75	0
2,2-Dichloropropane	0.173	0.194	-	-12.1	20	92	0
Bromochloromethane	0.086	0.09*	-	-4.7	20	78	0
Cyclohexane	0.235	0.274	-	-16.6	20	88	0
Chloroform	0.287	0.32	-	-11.5	20	87	0
Ethyl acetate	0.082	0.092	-	-12.2	20	99	0
Carbon tetrachloride	0.249	0.245	-	1.6	20	76	0
Tetrahydrofuran	0.027	0.032	-	-18.5	20	93	0
Dibromofluoromethane	0.265	0.26	-	1.9	20	79	0
1,1,1-Trichloroethane	0.252	0.258	-	-2.4	20	78	0
2-Butanone	0.036	0.044	-	-22.2*	20	108	0
1,1-Dichloropropene	0.196	0.21	-	-7.1	20	79	0
Benzene	0.589	0.632	-	-7.3	20	79	0
tert-Amyl methyl ether	0.271	0.263	-	3	20	86	0
1,2-Dichloroethane-d4	0.267	0.277	-	-3.7	20	83	0
1,2-Dichloroethane	0.201	0.221	-	-10	20	87	0
Methyl cyclohexane	0.278	0.293	-	-5.4	20	82	0
Trichloroethene	0.173	0.182*	-	-5.2	20	78	0
Dibromomethane	0.099	0.096	-	3	20	76	0

*** Value outside of QC limits.**

Calibration Verification Summary
Form 7
Volatiles

Client	: GZA GeoEnvironmental, Inc.		**Lab Number**	: L2432894	
Project Name	: BARNSTABLE		**Project Number**	: 01.0177641.00	
Instrument ID	: VOA116		**Calibration Date**	: 06/19/24 04:42	
Lab File ID	: V16240619A03		**Init. Calib. Date(s)**	: 05/31/24	06/01/24
Sample No	: WG1936533-2		**Init. Calib. Times**	: 23:29	03:27
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichloropropane	0.151	0.172	-	-13.9	20	92	0
2-Chloroethyl vinyl ether	0.064	0.054	-	15.6	20	76	0
Bromodichloromethane	0.245	0.25*	-	-2	20	78	0
1,4-Dioxane	0.00072	0.00061*	-	15.3	20	71	0
cis-1,3-Dichloropropene	10	10.061	-	-0.6	20	81	0
Chlorobenzene-d5	1	1	-	0	20	82	0
Toluene-d8	1.053	1.075	-	-2.1	20	82	0
Toluene	0.47	0.474	-	-0.9	20	78	0
4-Methyl-2-pentanone	10	9.261	-	7.4	20	86	0
Tetrachloroethene	0.249	0.233	-	6.4	20	73	0
trans-1,3-Dichloropropene	0.217	0.223*	-	-2.8	20	84	0
Ethyl methacrylate	10	8.711	-	12.9	20	86	0
1,1,2-Trichloroethane	0.128	0.13*	-	-1.6	20	80	0
Chlorodibromomethane	0.218	0.201	-	7.8	20	73	0
1,3-Dichloropropane	0.248	0.253	-	-2	20	80	0
1,2-Dibromoethane	0.146	0.145*	-	0.7	20	77	0
2-Hexanone	10	9.327	-	6.7	20	92	0
Chlorobenzene	0.549	0.544	-	0.9	20	78	0
Ethylbenzene	0.912	0.916	-	-0.4	20	79	0
1,1,1,2-Tetrachloroethane	0.21	0.198	-	5.7	20	76	0
p/m Xylene	0.365	0.362	-	0.8	20	76	0
o Xylene	20	17.814	-	10.9	20	77	0
Styrene	20	17.866	-	10.7	20	78	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	85	0
Bromoform	0.272	0.221	-	18.8	20	72	0
Isopropylbenzene	10	8.606	-	13.9	20	76	0
4-Bromofluorobenzene	0.701	0.706	-	-0.7	20	87	0
Bromobenzene	0.484	0.426	-	12	20	72	0
n-Propylbenzene	2.119	2.071	-	2.3	20	79	0
1,4-Dichlorobutane	0.388	0.416	-	-7.2	20	92	0
1,1,2,2-Tetrachloroethane	0.334	0.324	-	3	20	81	0
4-Ethyltoluene	1.814	1.649	-	9.1	20	77	0
2-Chlorotoluene	1.426	1.422	-	0.3	20	80	0
1,3,5-Trimethylbenzene	1.513	1.471	-	2.8	20	78	0
1,2,3-Trichloropropane	0.258	0.26	-	-0.8	20	83	0
trans-1,4-Dichloro-2-buten	0.077	0.086	-	-11.7	20	94	0
4-Chlorotoluene	1.249	1.235	-	1.1	20	80	0
tert-Butylbenzene	1.421	1.258	-	11.5	20	76	0
1,2,4-Trimethylbenzene	1.544	1.393	-	9.8	20	77	0
sec-Butylbenzene	10	9.144	-	8.6	20	78	0
p-Isopropyltoluene	10	8.99	-	10.1	20	78	0
1,3-Dichlorobenzene	0.758	0.784	-	-3.4	20	78	0
1,4-Dichlorobenzene	0.989	0.899	-	9.1	20	74	0

*** Value outside of QC limits.**

Calibration Verification Summary
Form 7
Volatiles

Client	: GZA GeoEnvironmental, Inc.		**Lab Number**	: L2432894	
Project Name	: BARNSTABLE		**Project Number**	: 01.0177641.00	
Instrument ID	: VOA116		**Calibration Date**	: 06/19/24 04:42	
Lab File ID	: V16240619A03		**Init. Calib. Date(s)**	: 05/31/24	06/01/24
Sample No	: WG1936533-2		**Init. Calib. Times**	: 23:29	03:27
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
p-Diethylbenzene	1.059	0.91	-	14.1	20	76	0
n-Butylbenzene	10	9.077	-	9.2	20	80	0
1,2-Dichlorobenzene	0.883	0.812	-	8	20	74	0
1,2,4,5-Tetramethylbenzene	10	8.1	-	19	20	71	0
1,2-Dibromo-3-chloropropan	10	8.59	-	14.1	20	79	0
1,3,5-Trichlorobenzene	0.694	0.614	-	11.5	20	72	0
Hexachlorobutadiene	0.297	0.253	-	14.8	20	70	0
1,2,4-Trichlorobenzene	10	8.462	-	15.4	20	69	0
Naphthalene	10	7.567	-	24.3*	20	68	0
1,2,3-Trichlorobenzene	0.501	0.434	-	13.4	20	70	0

*** Value outside of QC limits.**

ANALYTICAL REPORT

Lab Number:	L2432908
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Jennifer McKechnie
Phone:	(781) 278-3864
Project Name:	BARNSTABLE
Project Number:	01.0177641.00
Report Date:	08/13/24

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0825), DoD (L2474), FL (E87814), IL (200081), IN (C-MA-04), KY (KY98046), LA (85084), ME (MA00030), MD (350), MI (9110), MN (025-999-495), NJ (MA015), NY (11627), NC (685), OR (MA-0262), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #525-23-107-88708A1), USFWS (Permit #A24920).

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508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432908
Report Date: 08/13/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2432908-01	MW-402S	WATER	155 S. FLAT ROCK RD	06/11/24 15:45	06/12/24
L2432908-02	MW-402D	WATER	155 S. FLAT ROCK RD	06/11/24 14:30	06/12/24
L2432908-03	MW-403S	WATER	155 S. FLAT ROCK RD	06/11/24 11:15	06/12/24
L2432908-04	MW-403D	WATER	155 S. FLAT ROCK RD	06/11/24 10:30	06/12/24
L2432908-05	PC-39	WATER	155 S. FLAT ROCK RD	06/11/24 12:55	06/12/24
L2432908-06	PC-39D	WATER	155 S. FLAT ROCK RD	06/11/24 12:10	06/12/24

Project Name:	BARNSTABLE	**Lab Number:**	L2432908
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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:	BARNSTABLE	**Lab Number:**	L2432908
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Case Narrative (continued)

Report Revision

August 13, 2024: At the client's request, all non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Perfluorinated Alkyl Acids by 1633

WG1939224-2R2: The sample was re-analyzed due to QC failures in the original analysis. The results of the re-analysis are reported.

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

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 08/13/24

ORGANICS

SEMIVOLATILES

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432908
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432908-01
Client ID: MW-402S
Sample Location: 155 S. FLAT ROCK RD

Date Collected: 06/11/24 15:45
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/26/24 08:41
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/25/24 17:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.46	J	ng/l	6.41	1.03	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.21	0.858	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.60	0.537	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.41	1.68	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.60	0.473	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.60	0.280	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.60	0.321	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.60	0.385	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.60	0.697	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.41	2.16	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.60	0.433	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.60	0.505	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.60	0.729	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.649	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.41	2.49	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.497	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.874	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.697	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.369	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.433	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.866	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.738	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.601	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.425	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.41	0.898	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.41	1.01	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.609	1

Project Name: BARNSTABLE **Lab Number:** L2432908

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432908-01 Date Collected: 06/11/24 15:45

Client ID: MW-402S Date Received: 06/12/24

Sample Location: 155 S. FLAT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.41	1.32	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.41	1.32	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.697	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.738	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.77	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.21	0.457	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.21	0.425	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.21	0.353	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.21	1.89	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.02	2.64	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.1	9.38	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.1	6.32	1

Project Name: BARNSTABLE **Lab Number:** L2432908

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432908-01 Date Collected: 06/11/24 15:45

Client ID: MW-402S Date Received: 06/12/24

Sample Location: 155 S. FLAT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	79		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	92		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	83		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	106		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	84		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	84		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	79		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	94		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	84		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	78		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	83		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	77		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	99		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	75		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	69		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	91		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	76		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	72		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	83		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	72		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	80		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	83		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	87		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432908
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432908-02
Client ID: MW-402D
Sample Location: 155 S. FLAT ROCK RD

Date Collected: 06/11/24 14:30
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/26/24 09:20
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/25/24 17:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.93	J	ng/l	6.14	0.982	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.07	0.821	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.54	0.514	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.14	1.60	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.54	0.453	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.54	0.269	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.54	0.307	1
Perfluorohexanesulfonic Acid (PFHxS)	2.87		ng/l	1.54	0.368	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.54	0.668	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.14	2.07	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.54	0.414	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.54	0.484	1
Perfluorooctanesulfonic Acid (PFOS)	1.13	J	ng/l	1.54	0.698	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.54	0.622	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.14	2.39	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.54	0.476	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.54	0.836	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.54	0.668	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.54	0.353	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.54	0.414	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.54	0.829	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.54	0.706	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.54	0.576	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.54	0.407	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.14	0.860	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.14	0.967	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.54	0.583	1

Project Name: BARNSTABLE **Lab Number:** L2432908

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432908-02 Date Collected: 06/11/24 14:30

Client ID: MW-402D Date Received: 06/12/24

Sample Location: 155 S. FLAT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.14	1.27	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.14	1.27	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.54	0.668	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.54	0.706	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.4	3.61	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.4	1.88	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.07	0.437	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.07	0.407	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.07	0.338	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.07	1.81	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.68	2.53	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	38.4	8.98	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	38.4	6.06	1

Project Name: BARNSTABLE **Lab Number:** L2432908

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432908-02 Date Collected: 06/11/24 14:30

Client ID: MW-402D Date Received: 06/12/24

Sample Location: 155 S. FLAT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	80		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	96		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	85		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	94		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	91		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	93		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	85		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	79		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	97		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	88		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	78		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	72		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	69		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	87		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	74		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	70		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	78		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	72		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	67		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	90		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	70		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	89		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	79		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	84		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432908
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432908-03
Client ID: MW-403S
Sample Location: 155 S. FLAT ROCK RD

Date Collected: 06/11/24 11:15
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/26/24 09:33
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/25/24 17:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	12.9		ng/l	6.34	1.01	1
Perfluoropentanoic Acid (PFPeA)	29.4		ng/l	3.17	0.848	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.58	0.531	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.34	1.66	1
Perfluorohexanoic Acid (PFHxA)	17.2		ng/l	1.58	0.468	1
Perfluoropentanesulfonic Acid (PFPeS)	0.301	J	ng/l	1.58	0.278	1
Perfluoroheptanoic Acid (PFHpA)	15.3		ng/l	1.58	0.317	1
Perfluorohexanesulfonic Acid (PFHxS)	3.82		ng/l	1.58	0.380	1
Perfluorooctanoic Acid (PFOA)	18.3		ng/l	1.58	0.690	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	22.6		ng/l	6.34	2.14	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.58	0.428	1
Perfluorononanoic Acid (PFNA)	4.65		ng/l	1.58	0.500	1
Perfluorooctanesulfonic Acid (PFOS)	11.0		ng/l	1.58	0.722	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.58	0.642	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.34	2.46	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.58	0.492	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.58	0.864	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.58	0.690	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.58	0.365	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.58	0.428	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.58	0.856	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.58	0.729	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.58	0.595	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.58	0.420	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.34	0.888	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.34	0.999	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.58	0.603	1

Project Name: BARNSTABLE **Lab Number:** L2432908

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432908-03 Date Collected: 06/11/24 11:15

Client ID: MW-403S Date Received: 06/12/24

Sample Location: 155 S. FLAT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.34	1.31	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.34	1.31	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.58	0.690	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.58	0.729	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.8	3.73	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.8	1.94	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.17	0.452	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.17	0.420	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.17	0.349	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.17	1.87	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.93	2.62	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	39.6	9.28	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	39.6	6.26	1

Project Name: BARNSTABLE **Lab Number:** L2432908

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432908-03 Date Collected: 06/11/24 11:15

Client ID: MW-403S Date Received: 06/12/24

Sample Location: 155 S. FLAT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	78		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	85		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	76		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	100		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	81		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	84		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	85		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	77		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	93		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	84		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	71		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	73		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	67		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	86		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	67		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	65		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	85		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	65		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	64		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	82		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	70		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	78		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	76		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	84		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432908
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432908-04
Client ID: MW-403D
Sample Location: 155 S. FLAT ROCK RD

Date Collected: 06/11/24 10:30
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/26/24 09:46
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/25/24 17:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	8.20		ng/l	6.29	1.00	1
Perfluoropentanoic Acid (PFPeA)	10.4		ng/l	3.14	0.841	1
Perfluorobutanesulfonic Acid (PFBS)	2.10		ng/l	1.57	0.526	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.29	1.64	1
Perfluorohexanoic Acid (PFHxA)	12.5		ng/l	1.57	0.464	1
Perfluoropentanesulfonic Acid (PFPeS)	1.10	J	ng/l	1.57	0.275	1
Perfluoroheptanoic Acid (PFHpA)	5.96		ng/l	1.57	0.314	1
Perfluorohexanesulfonic Acid (PFHxS)	24.2		ng/l	1.57	0.377	1
Perfluorooctanoic Acid (PFOA)	13.2		ng/l	1.57	0.684	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.29	2.12	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.57	0.424	1
Perfluorononanoic Acid (PFNA)	2.47		ng/l	1.57	0.495	1
Perfluorooctanesulfonic Acid (PFOS)	18.9		ng/l	1.57	0.715	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.57	0.636	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.29	2.44	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.57	0.487	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.57	0.856	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.57	0.684	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.57	0.361	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.57	0.424	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.57	0.849	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.57	0.723	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.57	0.589	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.57	0.416	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.29	0.880	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.29	0.990	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.57	0.597	1

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432908
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432908-04
Client ID: MW-403D
Sample Location: 155 S. FLAT ROCK RD
Date Collected: 06/11/24 10:30
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.29	1.30	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.29	1.30	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.57	0.684	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.57	0.723	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.7	3.69	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.7	1.92	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.14	0.448	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.14	0.416	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.14	0.346	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.14	1.85	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.86	2.59	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	39.3	9.19	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	39.3	6.20	1

Project Name: BARNSTABLE **Lab Number:** L2432908

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432908-04 Date Collected: 06/11/24 10:30

Client ID: MW-403D Date Received: 06/12/24

Sample Location: 155 S. FLAT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	79		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	89		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	86		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	94		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	78		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	85		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	84		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	78		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	97		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	79		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	75		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	75		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	57		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	66		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	70		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	62		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	79		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	64		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	65		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	84		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	63		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	82		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	73		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	78		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432908
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432908-05
Client ID: PC-39
Sample Location: 155 S. FLAT ROCK RD

Date Collected: 06/11/24 12:55
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/26/24 09:58
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/25/24 17:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.84	J	ng/l	6.36	1.02	1
Perfluoropentanoic Acid (PFPeA)	4.40		ng/l	3.18	0.850	1
Perfluorobutanesulfonic Acid (PFBS)	0.930	J	ng/l	1.59	0.532	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.36	1.66	1
Perfluorohexanoic Acid (PFHxA)	3.77		ng/l	1.59	0.469	1
Perfluoropentanesulfonic Acid (PFPeS)	1.23	J	ng/l	1.59	0.278	1
Perfluoroheptanoic Acid (PFHpA)	2.44		ng/l	1.59	0.318	1
Perfluorohexanesulfonic Acid (PFHxS)	13.0		ng/l	1.59	0.381	1
Perfluorooctanoic Acid (PFOA)	1.28	J	ng/l	1.59	0.691	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.36	2.14	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.59	0.429	1
Perfluorononanoic Acid (PFNA)	2.09		ng/l	1.59	0.501	1
Perfluorooctanesulfonic Acid (PFOS)	40.3		ng/l	1.59	0.723	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.59	0.644	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.36	2.47	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.59	0.493	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.59	0.866	1
Perfluoroundecanoic Acid (PFUnA)	3.24	F	ng/l	1.59	0.691	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.59	0.366	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.59	0.429	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.59	0.858	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.59	0.731	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.59	0.596	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.59	0.421	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.36	0.890	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.36	1.00	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.59	0.604	1

Project Name: BARNSTABLE **Lab Number:** L2432908

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432908-05 Date Collected: 06/11/24 12:55

Client ID: PC-39 Date Received: 06/12/24

Sample Location: 155 S. FLAT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.36	1.31	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.36	1.31	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.59	0.691	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.59	0.731	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.9	3.73	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.9	1.95	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.18	0.453	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.18	0.421	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.18	0.350	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.18	1.88	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.95	2.62	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	39.7	9.30	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	39.7	6.27	1

Project Name: BARNSTABLE **Lab Number:** L2432908

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432908-05 Date Collected: 06/11/24 12:55

Client ID: PC-39 Date Received: 06/12/24

Sample Location: 155 S. FLAT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	78		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	88		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	82		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	90		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	83		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	84		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	78		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	92		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	82		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	80		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	81		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	59		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	85		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	80		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	66		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	80		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	68		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	62		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	83		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	76		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	79		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	75		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	82		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432908
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432908-06
Client ID: PC-39D
Sample Location: 155 S. FLAT ROCK RD

Date Collected: 06/11/24 12:10
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/26/24 10:11
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/25/24 17:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.48	J	ng/l	6.31	1.01	1
Perfluoropentanoic Acid (PFPeA)	2.76	J	ng/l	3.16	0.844	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.58	0.529	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.31	1.65	1
Perfluorohexanoic Acid (PFHxA)	4.27		ng/l	1.58	0.466	1
Perfluoropentanesulfonic Acid (PFPeS)	0.702	J	ng/l	1.58	0.276	1
Perfluoroheptanoic Acid (PFHpA)	2.58		ng/l	1.58	0.316	1
Perfluorohexanesulfonic Acid (PFHxS)	6.72		ng/l	1.58	0.379	1
Perfluorooctanoic Acid (PFOA)	2.53		ng/l	1.58	0.686	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	17.3		ng/l	6.31	2.13	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.58	0.426	1
Perfluorononanoic Acid (PFNA)	2.56		ng/l	1.58	0.497	1
Perfluorooctanesulfonic Acid (PFOS)	26.0		ng/l	1.58	0.718	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.58	0.639	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.31	2.45	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.58	0.489	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.58	0.860	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.58	0.686	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.58	0.363	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.58	0.426	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.58	0.852	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.58	0.726	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.58	0.592	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.58	0.418	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.31	0.884	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.31	0.994	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.58	0.600	1

Project Name: BARNSTABLE **Lab Number:** L2432908

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432908-06 Date Collected: 06/11/24 12:10

Client ID: PC-39D Date Received: 06/12/24

Sample Location: 155 S. FLAT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.31	1.30	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.31	1.30	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.58	0.686	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.58	0.726	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.8	3.71	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.8	1.93	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.16	0.450	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.16	0.418	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.16	0.347	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.16	1.86	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.89	2.60	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	39.4	9.23	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	39.4	6.23	1

Project Name: BARNSTABLE **Lab Number:** L2432908

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432908-06 Date Collected: 06/11/24 12:10

Client ID: PC-39D Date Received: 06/12/24

Sample Location: 155 S. FLAT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	80		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	91		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	84		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	103		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	86		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	89		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	85		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	77		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	87		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	75		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	71		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	68		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	55		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	94		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	65		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	64		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	84		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	66		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	62		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	85		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	78		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	74		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	81		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	80		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432908
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/26/24 08:02
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/25/24 17:20

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-06 Batch: WG1939224-1					
Perfluorobutanoic Acid (PFBA)	1.34	J	ng/l	6.40	1.02
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.20	0.856
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.60	0.536
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.40	1.67
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.60	0.472
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.60	0.280
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.60	0.320
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.60	0.384
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.60	0.696
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.40	2.16
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.60	0.432
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.60	0.504
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.60	0.728
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.648
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.40	2.49
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.496
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.872
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.696
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.368
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.432
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.864
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.736
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.600
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.424
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.40	0.896
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.40	1.01
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.608

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432908
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/26/24 08:02
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/25/24 17:20

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-06 Batch: WG1939224-1					
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.40	1.32
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.40	1.32
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.696
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.736
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.76
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.456
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.424
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.352
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	1.89
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.00	2.64
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.0	9.36
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.0	6.31

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432908
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/26/24 08:02
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/25/24 17:20

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-06 Batch: WG1939224-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	81		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	96		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	86		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	98		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	88		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	92		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	89		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	79		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	103		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	85		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	83		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	77		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	104		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	84		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	76		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	109		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	78		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	87		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	85		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	69		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	72		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	94		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	104		20-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432908
Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-06 Batch: WG1939224-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	109		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	105		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	98		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	115		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	109		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	110		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	100		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	104		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	104		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	110		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	100		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	104		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	110		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	91		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	106		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	93		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	106		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	106		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	109		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	100		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	103		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	109		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432908
Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-06 Batch: WG1939224-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	111		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	103		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	102		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	111		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	93		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	120		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	118		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	100		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	95		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	111		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	102		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	122		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	101		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	103		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	115		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	105		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	104		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	82		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432908

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-06 Batch: WG1939224-2 LOW LEVEL

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	91				20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	91				20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	97				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	95				20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	87				20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	90				20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	90				20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	91				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	99				20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	89				20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	94				20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	94				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	99				20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	92				20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	92				20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	94				20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	103				20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	103				20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	95				20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	84				20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	61				20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	65				20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	88				20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	93				20-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432908
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-06 Batch: WG1939224-3								
Perfluorobutanoic Acid (PFBA)	116		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	124		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	118		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	116		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	121		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	113		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	114		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	110		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	122		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	118		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	125		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	109		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	113		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	126		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	137		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	118		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	118		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	117		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	113		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	116		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	128		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	123		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432908

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-06 Batch: WG1939224-3								
Perfluorotridecanoic Acid (PFTrDA)	134		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	113		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	117		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	122		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	109		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	108		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	106		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	125		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	121		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	114		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	113		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	133		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	110		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	113		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	107		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	116		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	104		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	92		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432908

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-06 Batch: WG1939224-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	90				20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	92				20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	87				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	91				20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	82				20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	88				20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	88				20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	82				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	105				20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	86				20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	82				20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	84				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	75				20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	101				20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	89				20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	74				20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	93				20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	85				20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	83				20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	84				20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	68				20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	74				20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	80				20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	89				20-150

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432908
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1939224-4 WG1939224-5 QC Sample: L2432908-01 Client ID: MW-402S												
Perfluorobutanoic Acid (PFBA)	1.46J	82.8	98.1	117		98.4	120		40-150	0		30
Perfluoropentanoic Acid (PFPeA)	ND	41.4	51.5	124		51.7	127		40-150	0		30
Perfluorobutanesulfonic Acid (PFBS)	ND	18.4	21.7	118		20.7	115		40-150	5		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	77.6	89.6	115		87.8	115		40-150	2		30
Perfluorohexanoic Acid (PFHxA)	ND	20.7	24.5	118		25.2	124		40-150	3		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	19.5	21.7	111		21.1	111		40-150	3		30
Perfluoroheptanoic Acid (PFHpA)	ND	20.7	24.4	118		22.4	110		40-150	9		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	18.9	21.4	113		20.9	113		40-150	2		30
Perfluorooctanoic Acid (PFOA)	ND	20.7	25.6	124		25.6	126		40-150	0		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	78.7	86.3	110		88.9	115		40-150	3		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	19.7	25.3	128		24.3	126		40-150	4		30
Perfluorononanoic Acid (PFNA)	ND	20.7	21.6	104		22.3	110		40-150	3		30
Perfluorooctanesulfonic Acid (PFOS)	ND	19.2	21.8	113		21.6	115		40-150	1		30
Perfluorodecanoic Acid (PFDA)	ND	20.7	25.8	125		24.4	120		40-150	6		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	79.5	114	143		116	149		40-150	2		30
Perfluorononanesulfonic Acid (PFNS)	ND	19.9	24.6	124		23.0	118		40-150	7		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	20.7	24.4	118		24.0	118		40-150	2		30
Perfluoroundecanoic Acid (PFUnA)	ND	20.7	26.4	128		26.7	132		40-150	1		30
Perfluorodecanesulfonic Acid (PFDS)	ND	20	22.8	114		21.7	111		40-150	5		30
Perfluorooctanesulfonamide (PFOSA)	ND	20.7	24.0	116		23.5	116		40-150	2		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	20.7	23.3	113		26.4	130		40-150	12		30
Perfluorododecanoic Acid (PFDoA)	ND	20.7	25.3	122		24.4	120		40-150	4		30

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432908
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1939224-4 WG1939224-5 QC Sample: L2432908-01 Client ID: MW-402S												
Perfluorotridecanoic Acid (PFTrDA)	ND	20.7	25.7	124		25.2	124		40-150	2		30
Perfluorotetradecanoic Acid (PFTeDA)	ND	20.7	25.3	122		23.8	117		40-150	6		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	82.8	93.4	113		93.9	116		40-150	1		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	78.2	91.8	117		93.6	122		40-150	2		30
Perfluorododecanesulfonic Acid (PFDoS)	ND	20.1	21.4	107		20.0	102		40-150	7		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	77.4	83.2	107		85.6	113		40-150	3		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	78.2	81.0	104		78.0	102		40-150	4		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	20.7	25.3	122		25.8	127		40-150	2		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	20.7	23.8	115		25.3	125		40-150	6		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	207	233	113		232	114		40-150	0		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	207	238	115		233	115		40-150	2		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	41.4	57.3	138		57.8	143		40-150	1		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	41.4	45.7	110		47.1	116		40-150	3		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	36.8	42.4	115		45.4	126		40-150	7		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	41.4	45.4	110		46.8	115		40-150	3		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	104	129	125		133	131		40-150	3		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	518	519	100		570	112		40-150	9		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	518	474	92		518	102		40-150	9		30

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432908
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1939224-4 WG1939224-5 QC Sample: L2432908-01 Client ID: MW-402S

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	66		71		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	100		96		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	105		108		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	80		74		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	101		76		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	87		80		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	71		68		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	87		82		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	80		74		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	86		86		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	77		72		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	83		80		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	82		82		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	78		72		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	78		74		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	79		76		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	80		89		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	84		75		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	68		63		20-150
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	84		82		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	85		86		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	78		75		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	87		84		20-150

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432908

Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1939224-4 WG1939224-5 QC Sample: L2432908-01 Client ID: MW-402S												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	81		84		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432908
Report Date: 08/13/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2432908-01A	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432908-01B	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432908-01C	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432908-02A	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432908-02B	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432908-02C	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432908-03A	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432908-03B	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432908-03C	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432908-04A	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432908-04B	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432908-04C	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432908-05A	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432908-05B	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432908-05C	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432908-06A	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432908-06B	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432908-06C	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432908
Report Date: 08/13/24

PFAS PARAMETER SUMMARY

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

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432908
Report Date: 08/13/24

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:	BARNSTABLE	**Lab Number:**	L2432908
Project Number:	01.0177641.00	**Report Date:**	08/13/24

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

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

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

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

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

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

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

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

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2432908
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2432908
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

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

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

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration 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:	BARNSTABLE	**Lab Number:**	L2432908
Project Number:	01.0177641.00	**Report Date:**	08/13/24

REFERENCES

144 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. Draft EPA Method 1633, EPA Document 821-D-22-001, June 2022.

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

Mansfield Facility
SM 2540D: TSS.
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.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

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

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

ALPHA
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Date Rec'd in Lab: 6/14/24

ALPHA Job #: L2432908

Client Information

Client: GZA GeoEnvironmental, Inc.
Address: 249 Vanderbilt Avenue
Norwood, MA 02062
Phone: 781-589-3866
Email: Jennifer.McKechnie@gza.com; Rowena.Thompson@gza.com; Flora.Su@gza.com

Additional Project Information:

Project Information

Project Name: Barnstable
Project Location: 155 S. Flint Rock Rd
Project #: 01.0177641.00
Project Manager: Jennifer McKechnie
ALPHA Quote #: 27478

Turn-Around Time

(X) Standard ☐ RUSH (only confirmed if pre-approved)

Date Due:

Report Information - Data Deliverables

(X) ADEx (X) EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

(X) Yes ☐ No MA MCP Analytical Methods ☐ Yes (X) No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
(X) Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes (X) No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	ANALYSIS: PFAS: EPA 1633	SAMPLE INFO	TOTAL # BOTTLES
32908-01	MW-402S	6/11/24	15:45	GW	VER	X		3
-02	MW-402D		14:30		VER	X		3
-03	MW-403S		11:15		VER	X		3
-04	MW-403D		10:30		VER	X		3
-05	PC-39		12:55		VER	X		3
-06	PC-39D		12:10		VER	X		3

VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

Sample Comments

Container Type	P
Preservative	A

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H= $Na_2S_2O_3$
I= Ascorbic Acid
J= NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Flora Su	06/12/24 11:25	DAVIS	6-12-24 11:25
DAVIS	6-12-24 15:25		6/12/24 1525
Jeffrey Fortunato	6/14/24 15:00		6/14/24 1600
MSC	6/14/24 1700	Emily Bonkoski	6/14/24 17:00

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L2432921
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Jennifer McKechnie
Phone:	(781) 278-3864
Project Name:	BARNSTABLE
Project Number:	01.0177641.00
Report Date:	08/13/24

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0825), DoD (L2474), FL (E87814), IL (200081), IN (C-MA-04), KY (KY98046), LA (85084), ME (MA00030), MD (350), MI (9110), MN (025-999-495), NJ (MA015), NY (11627), NC (685), OR (MA-0262), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #525-23-107-88708A1), USFWS (Permit #A24920).

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

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2432921-01	PFW-2	WATER	155 S. FLINT ROCK ROAD	06/11/24 09:10	06/12/24
L2432921-02	PFW-5	WATER	155 S. FLINT ROCK ROAD	06/11/24 09:20	06/12/24
L2432921-03	MW-305	WATER	155 S. FLINT ROCK ROAD	06/11/24 11:15	06/12/24
L2432921-04	PC-34S	WATER	155 S. FLINT ROCK ROAD	06/11/24 10:25	06/12/24
L2432921-05	PC-34D	WATER	155 S. FLINT ROCK ROAD	06/11/24 11:10	06/12/24
L2432921-06	PC-35S	WATER	155 S. FLINT ROCK ROAD	06/11/24 11:11	06/12/24
L2432921-07	PC-35D	WATER	155 S. FLINT ROCK ROAD	06/11/24 12:18	06/12/24
L2432921-08	PC-36S	WATER	155 S. FLINT ROCK ROAD	06/11/24 12:50	06/12/24
L2432921-09	PC-36D	WATER	155 S. FLINT ROCK ROAD	06/11/24 13:40	06/12/24
L2432921-10	MW-311	WATER	155 S. FLINT ROCK ROAD	06/11/24 14:25	06/12/24
L2432921-11	OW-2D	WATER	155 S. FLINT ROCK ROAD	06/10/24 16:30	06/12/24
L2432921-12	OW-2S	WATER	155 S. FLINT ROCK ROAD	06/10/24 17:55	06/12/24
L2432921-13	OW-8A	WATER	155 S. FLINT ROCK ROAD	06/10/24 14:45	06/12/24
L2432921-14	OW-8D	WATER	155 S. FLINT ROCK ROAD	06/10/24 13:10	06/12/24
L2432921-15	PC-37	WATER	155 S. FLINT ROCK ROAD	06/10/24 14:10	06/12/24
L2432921-16	PFW-1	WATER	155 S. FLINT ROCK ROAD	06/10/24 16:25	06/12/24
L2432921-17	SBV-3	WATER	155 S. FLINT ROCK ROAD	06/10/24 16:20	06/12/24
L2432921-18	VDT-01	WATER	155 S. FLINT ROCK ROAD	06/10/24 16:15	06/12/24
L2432921-19	VDT-03	WATER	155 S. FLINT ROCK ROAD	06/10/24 12:45	06/12/24

Project Name:	BARNSTABLE	**Lab Number:**	L2432921
Project Number:	01.0177641.00	**Report Date:**	08/13/24

MADEP MCP Response Action Analytical Report Certification

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

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

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

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

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

Project Name:	BARNSTABLE	**Lab Number:**	L2432921
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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:	BARNSTABLE	**Lab Number:**	L2432921
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Case Narrative (continued)

Report Revision

August 13, 2024: At the client's request, all non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Report Submission

July 08, 2024: This final report includes the results of all requested analyses.

June 20, 2024: This is a preliminary report.

MCP Related Narratives

Volatile Organics

L2432921-02, -12, -13, -16, and -17: Initial calibration utilized a quadratic fit for: cis-1,3-dichloropropene, 1,2,4-trichlorobenzene, naphthalene

In reference to question H:

L2432921-02, -12, -13, -16, and -17: Initial Calibration did not meet:

Lowest Calibration Standard Minimum Response Factor: 1,1-dichloroethane (0.2083), cis-1,2-dichloroethene (0.1201), bromochloromethane (0.0727), chloroform (0.257), trichloroethene (0.1451), 1,2-dichloropropane (0.1222), bromodichloromethane (0.2), 1,4-dioxane (0.0006), trans-1,3-dichloropropene (0.1531), 1,1,2-trichloroethane (0.1208), 1,2-dibromoethane (0.1265), 1,2,3-trichlorobenzene (0.358)

Average Response Factor: 1,1-dichloroethane, cis-1,2-dichloroethene, bromochloromethane, chloroform, trichloroethene, 1,2-dichloropropane, bromodichloromethane, 1,4-dioxane, trans-1,3-dichloropropene, 1,1,2-trichloroethane, 1,2-dibromoethane

Verification: carbon disulfide (63%)

L2432921-02, -12, -13, -16, and -17: The associated continuing calibration standard is outside the acceptance criteria for several compounds; however, it is within overall method allowances. Associated results are considered to be biased high if the %D is negative and biased low if the %D is positive. A copy of the continuing calibration standard is included as an addendum to this report.

Project Name:	BARNSTABLE	**Lab Number:**	L2432921
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Case Narrative (continued)

VPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

Non-MCP Related Narratives

Perfluorinated Alkyl Acids by 1633

L2432921-01, -02, -03, -05, -07, -09, -10, -12, -13, and -16: The sample was re-analyzed on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

L2432921-01, -01D, -10D, -16, and WG1941502-5: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

L2432921-10 and -16: The sample was re-extracted in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis and re-extraction were performed only for the compound(s) that exceeded the calibration range.

WG1941502-3: The sample was re-analyzed due to QC failures in the original analysis. The results of the re-analysis are reported.

The WG1941502-4/-5 MS/MSD recoveries, performed on L2432921-01, are outside the acceptance criteria for perfluorohexanoic acid (pfhxa) (180%/188%), perfluoropentanesulfonic acid (pfpes) (MS 151%), perfluorohexanesulfonic acid (pfhxs) (MS 286%), perfluorooctanoic acid (pfoa) (MS 196%), 1h,1h,2h,2h-perfluorooctanesulfonic acid (6:2fts) (187%/174%), perfluoroheptanesulfonic acid (pfhps) (225%/167%), perfluorononanoic acid (pfna) (164%/171%), perfluorooctanesulfonic acid (pfos) (0%/0%), 1h,1h,2h,2h-perfluorodecanesulfonic acid (8:2fts) (MS 0%), perfluorononanesulfonic acid (pfns) (MS 185%), perfluoroundecanoic acid (pfuna) (382%/0%), perfluorodecanesulfonic acid (pfds) (179%/157%), perfluoro-3-methoxypropanoic acid (pfmpa) (MS 182%), and nonafluoro-3,6-dioxaheptanoic acid (nfdha) (MS 153%).

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: Kelly Stenstrom

Title: Technical Director/Representative Date: 08/13/24

QC OUTLIER SUMMARY REPORT

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab								
1633	PFW-2	L2432921-01	Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	Surrogate	35	41-123	-	- - not applicable - -
1633	PFW-2	L2432921-01	Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	Surrogate	35	41-125	-	- - not applicable - -
1633	PFW-2	L2432921-01	Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	Surrogate	36	40-121	-	- - not applicable - -
1633	PFW-2	L2432921-01	Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	Surrogate	32	46-115	-	- - not applicable - -
1633	PFW-2	L2432921-01	Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	Surrogate	34	39-121	-	- - not applicable - -
1633	PFW-2	L2432921-01	Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	Surrogate	34	38-114	-	- - not applicable - -
1633	PFW-2	L2432921-01	Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	Surrogate	31	32-114	-	- - not applicable - -
1633	PFW-2	L2432921-01 D	Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	Surrogate	38	46-115	-	- - not applicable - -
1633	PFW-2	L2432921-01 D	Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	Surrogate	31	32-114	-	- - not applicable - -
1633	MW-311	L2432921-10 D	Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	Surrogate	41	46-115	-	- - not applicable - -
1633	PFW-1	L2432921-16	Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	Surrogate	212	14-108	-	- - not applicable - -
1633	PFW-1	L2432921-16	N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	Surrogate	210	10-150	-	- - not applicable - -
1633	PFW-1	L2432921-16	N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	Surrogate	195	11-94	-	- - not applicable - -
1633	PFW-1	L2432921-16	N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	Surrogate	198	11-97	-	- - not applicable - -
1633	PFW-1	L2432921-16	N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	Surrogate	230	10-137	-	- - not applicable - -
1633	PFW-1	L2432921-16	N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	Surrogate	228	10-130	-	- - not applicable - -
1633	Batch QC (L2432921-01)	WG1941502-4	Perfluorohexanoic Acid (PFHxA)	MS	180	40-150	01-16,18-19	potential high bias
1633	Batch QC (L2432921-01)	WG1941502-4	Perfluoropentanesulfonic Acid (PFPeS)	MS	151	40-150	01-16,18-19	potential high bias
1633	Batch QC (L2432921-01)	WG1941502-4	Perfluorohexanesulfonic Acid (PFHxS)	MS	286	40-150	01-16,18-19	potential high bias
1633	Batch QC (L2432921-01)	WG1941502-4	Perfluorooctanoic Acid (PFOA)	MS	196	40-150	01-16,18-19	potential high bias
1633	Batch QC (L2432921-01)	WG1941502-4	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	MS	187	40-150	01-16,18-19	potential high bias

QC OUTLIER SUMMARY REPORT

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
1633	Batch QC (L2432921-01)	WG1941502-4	Perfluoroheptanesulfonic Acid (PFHpS)	MS	225	40-150	01-16,18-19	potential high bias
1633	Batch QC (L2432921-01)	WG1941502-4	Perfluorononanoic Acid (PFNA)	MS	164	40-150	01-16,18-19	potential high bias
1633	Batch QC (L2432921-01)	WG1941502-4	Perfluorooctanesulfonic Acid (PFOS)	MS	0	40-150	01-16,18-19	potential low bias
1633	Batch QC (L2432921-01)	WG1941502-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	MS	0	40-150	01-16,18-19	potential low bias
1633	Batch QC (L2432921-01)	WG1941502-4	Perfluorononanesulfonic Acid (PFNS)	MS	185	40-150	01-16,18-19	potential high bias
1633	Batch QC (L2432921-01)	WG1941502-4	Perfluoroundecanoic Acid (PFUnA)	MS	382	40-150	01-16,18-19	potential high bias
1633	Batch QC (L2432921-01)	WG1941502-4	Perfluorodecanesulfonic Acid (PFDS)	MS	179	40-150	01-16,18-19	potential high bias
1633	Batch QC (L2432921-01)	WG1941502-4	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	MS	182	40-150	01-16,18-19	potential high bias
1633	Batch QC (L2432921-01)	WG1941502-4	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	MS	153	40-150	01-16,18-19	potential high bias
1633	Batch QC (L2432921-01)	WG1941502-5	Perfluorohexanoic Acid (PFHxA)	MSD	188	40-150	01-16,18-19	potential high bias
1633	Batch QC (L2432921-01)	WG1941502-5	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	MSD	174	40-150	01-16,18-19	potential high bias
1633	Batch QC (L2432921-01)	WG1941502-5	Perfluoroheptanesulfonic Acid (PFHpS)	MSD	167	40-150	01-16,18-19	potential high bias
1633	Batch QC (L2432921-01)	WG1941502-5	Perfluorononanoic Acid (PFNA)	MSD	171	40-150	01-16,18-19	potential high bias
1633	Batch QC (L2432921-01)	WG1941502-5	Perfluorooctanesulfonic Acid (PFOS)	MSD	0	40-150	01-16,18-19	potential low bias
1633	Batch QC (L2432921-01)	WG1941502-5	Perfluoroundecanoic Acid (PFUnA)	MSD	0	40-150	01-16,18-19	potential low bias
1633	Batch QC (L2432921-01)	WG1941502-5	Perfluorodecanesulfonic Acid (PFDS)	MSD	157	40-150	01-16,18-19	potential high bias
1633	Batch QC (L2432921-01)	WG1941502-5	Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	Surrogate	38	41-123	-	- - not applicable - -
1633	Batch QC (L2432921-01)	WG1941502-5	Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	Surrogate	39	41-125	-	- - not applicable - -
1633	Batch QC (L2432921-01)	WG1941502-5	Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	Surrogate	38	40-121	-	- - not applicable - -
1633	Batch QC (L2432921-01)	WG1941502-5	Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	Surrogate	37	46-115	-	- - not applicable - -

QC OUTLIER SUMMARY REPORT

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
1633	Batch QC (L2432921-01)	WG1941502-5	Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	Surrogate	38	39-121	-	- - not applicable - -
1633	Batch QC (L2432921-01)	WG1941502-5	Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	Surrogate	36	38-114	-	- - not applicable - -
1633	Batch QC	WG1942285-2	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	LCS	151	40-150	10,16	potential high bias
Volatile Petroleum Hydrocarbons - Westborough Lab								
VPH-18-2.1	Batch QC	WG1936391-2	2,5-Dibromotoluene-PID	Surrogate	137	70-130	-	potential high bias
VPH-18-2.1	Batch QC	WG1936391-2	2,5-Dibromotoluene-FID	Surrogate	133	70-130	-	potential high bias
VPH-18-2.1	Batch QC	WG1936391-3	2,5-Dibromotoluene-PID	Surrogate	134	70-130	-	potential high bias

ORGANICS

VOLATILES

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-02 Date Collected: 06/11/24 09:20
Client ID: PFW-5 Date Received: 06/12/24
Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 141,8260D
Analytical Date: 06/19/24 09:26
Analyst: MCM

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

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-02 Date Collected: 06/11/24 09:20

Client ID: PFW-5 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

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

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-02 Date Collected: 06/11/24 09:20

Client ID: PFW-5 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	100		70-130

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-12 Date Collected: 06/10/24 17:55
Client ID: OW-2S Date Received: 06/12/24
Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 141,8260D
Analytical Date: 06/19/24 09:49
Analyst: MCM

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

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-12 Date Collected: 06/10/24 17:55

Client ID: OW-2S Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

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

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-12 Date Collected: 06/10/24 17:55

Client ID: OW-2S Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	101		70-130

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-13 Date Collected: 06/10/24 14:45
Client ID: OW-8A Date Received: 06/12/24
Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 141,8260D
Analytical Date: 06/19/24 10:13
Analyst: LAC

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

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-13 Date Collected: 06/10/24 14:45

Client ID: OW-8A Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	0.18	1
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18	1
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19	1
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19	1
Methyl tert butyl ether	ND		ug/l	2.0	0.17	1
p/m-Xylene	ND		ug/l	2.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19	1
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16	1
Dibromomethane	ND		ug/l	2.0	0.36	1
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	2.0	0.24	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	2.0	0.30	1
Methyl ethyl ketone	ND		ug/l	5.0	1.9	1
Methyl isobutyl ketone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Bromochloromethane	ND		ug/l	2.0	0.15	1
Tetrahydrofuran	ND		ug/l	2.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.0	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.0	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16	1
Bromobenzene	ND		ug/l	2.0	0.15	1
n-Butylbenzene	0.47	J	ug/l	2.0	0.19	1
sec-Butylbenzene	0.51	J	ug/l	2.0	0.18	1
tert-Butylbenzene	ND		ug/l	2.0	0.20	1
o-Chlorotoluene	ND		ug/l	2.0	0.22	1
p-Chlorotoluene	ND		ug/l	2.0	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35	1
Hexachlorobutadiene	ND		ug/l	0.60	0.22	1
Isopropylbenzene	0.61	J	ug/l	2.0	0.19	1
p-Isopropyltoluene	0.53	J	ug/l	2.0	0.19	1
Naphthalene	0.53	J	ug/l	2.0	0.22	1
n-Propylbenzene	1.7	J	ug/l	2.0	0.17	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-13 Date Collected: 06/10/24 14:45

Client ID: OW-8A Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22	1
1,3,5-Trimethylbenzene	0.80	J	ug/l	2.0	0.22	1
1,2,4-Trimethylbenzene	10		ug/l	2.0	0.19	1
Diethyl ether	ND		ug/l	2.0	0.16	1
Diisopropyl Ether	ND		ug/l	2.0	0.42	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28	1
1,4-Dioxane	ND		ug/l	250	61.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	99		70-130

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-16 Date Collected: 06/10/24 16:25
Client ID: PFW-1 Date Received: 06/12/24
Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 141,8260D
Analytical Date: 06/19/24 10:37
Analyst: LAC

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

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-16 Date Collected: 06/10/24 16:25

Client ID: PFW-1 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

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

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-16 Date Collected: 06/10/24 16:25

Client ID: PFW-1 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	101		70-130

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-17 Date Collected: 06/10/24 16:20
Client ID: SBV-3 Date Received: 06/12/24
Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 141,8260D
Analytical Date: 06/19/24 11:01
Analyst: LAC

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

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-17 Date Collected: 06/10/24 16:20

Client ID: SBV-3 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	0.18	1
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18	1
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19	1
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19	1
Methyl tert butyl ether	ND		ug/l	2.0	0.17	1
p/m-Xylene	ND		ug/l	2.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19	1
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16	1
Dibromomethane	ND		ug/l	2.0	0.36	1
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	2.0	0.24	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	2.0	0.30	1
Methyl ethyl ketone	ND		ug/l	5.0	1.9	1
Methyl isobutyl ketone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Bromochloromethane	ND		ug/l	2.0	0.15	1
Tetrahydrofuran	ND		ug/l	2.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.0	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.0	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16	1
Bromobenzene	ND		ug/l	2.0	0.15	1
n-Butylbenzene	0.48	J	ug/l	2.0	0.19	1
sec-Butylbenzene	0.69	J	ug/l	2.0	0.18	1
tert-Butylbenzene	ND		ug/l	2.0	0.20	1
o-Chlorotoluene	ND		ug/l	2.0	0.22	1
p-Chlorotoluene	ND		ug/l	2.0	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35	1
Hexachlorobutadiene	ND		ug/l	0.60	0.22	1
Isopropylbenzene	0.54	J	ug/l	2.0	0.19	1
p-Isopropyltoluene	0.48	J	ug/l	2.0	0.19	1
Naphthalene	2.0		ug/l	2.0	0.22	1
n-Propylbenzene	0.80	J	ug/l	2.0	0.17	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-17 Date Collected: 06/10/24 16:20

Client ID: SBV-3 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22	1
1,3,5-Trimethylbenzene	1.1	J	ug/l	2.0	0.22	1
1,2,4-Trimethylbenzene	4.8		ug/l	2.0	0.19	1
Diethyl ether	ND		ug/l	2.0	0.16	1
Diisopropyl Ether	ND		ug/l	2.0	0.42	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28	1
1,4-Dioxane	ND		ug/l	250	61.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	101		70-130

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 06/19/24 06:16
Analyst: MCM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 02,12-13,16-17 Batch: WG1936533-5					
Methylene chloride	ND		ug/l	2.0	0.68
1,1-Dichloroethane	ND		ug/l	1.0	0.21
Chloroform	ND		ug/l	1.0	0.22
Carbon tetrachloride	ND		ug/l	1.0	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	1.0	0.15
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14
Tetrachloroethene	ND		ug/l	1.0	0.18
Chlorobenzene	ND		ug/l	1.0	0.18
Trichlorofluoromethane	ND		ug/l	2.0	0.16
1,2-Dichloroethane	ND		ug/l	1.0	0.13
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16
Bromodichloromethane	ND		ug/l	1.0	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14
1,1-Dichloropropene	ND		ug/l	2.0	0.24
Bromoform	ND		ug/l	2.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	1.0	0.20
Ethylbenzene	ND		ug/l	1.0	0.17
Chloromethane	ND		ug/l	2.0	0.20
Bromomethane	ND		ug/l	2.0	0.26
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.0	0.13
1,1-Dichloroethene	ND		ug/l	1.0	0.17
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16
Trichloroethene	ND		ug/l	1.0	0.18

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 06/19/24 06:16
Analyst: MCM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 02,12-13,16-17 Batch: WG1936533-5					
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19
Methyl tert butyl ether	ND		ug/l	2.0	0.17
p/m-Xylene	ND		ug/l	2.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16
Dibromomethane	ND		ug/l	2.0	0.36
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18
Styrene	ND		ug/l	1.0	0.36
Dichlorodifluoromethane	ND		ug/l	2.0	0.24
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	2.0	0.30
Methyl ethyl ketone	ND		ug/l	5.0	1.9
Methyl isobutyl ketone	ND		ug/l	5.0	0.42
2-Hexanone	ND		ug/l	5.0	0.52
Bromochloromethane	ND		ug/l	2.0	0.15
Tetrahydrofuran	ND		ug/l	2.0	0.52
2,2-Dichloropropane	ND		ug/l	2.0	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
1,3-Dichloropropane	ND		ug/l	2.0	0.21
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16
Bromobenzene	ND		ug/l	2.0	0.15
n-Butylbenzene	ND		ug/l	2.0	0.19
sec-Butylbenzene	ND		ug/l	2.0	0.18
tert-Butylbenzene	ND		ug/l	2.0	0.20
o-Chlorotoluene	ND		ug/l	2.0	0.22

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 06/19/24 06:16
Analyst: MCM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 02,12-13,16-17 Batch: WG1936533-5					
p-Chlorotoluene	ND		ug/l	2.0	0.18
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35
Hexachlorobutadiene	ND		ug/l	0.60	0.22
Isopropylbenzene	ND		ug/l	2.0	0.19
p-Isopropyltoluene	ND		ug/l	2.0	0.19
Naphthalene	ND		ug/l	2.0	0.22
n-Propylbenzene	ND		ug/l	2.0	0.17
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22
1,3,5-Trimethylbenzene	ND		ug/l	2.0	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.0	0.19
Diethyl ether	ND		ug/l	2.0	0.16
Diisopropyl Ether	ND		ug/l	2.0	0.42
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28
1,4-Dioxane	ND		ug/l	250	61.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	102		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432921

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02,12-13,16-17 Batch: WG1936533-3 WG1936533-4								
Methylene chloride	94		93		70-130	1		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	110		100		70-130	10		20
Carbon tetrachloride	98		100		70-130	2		20
1,2-Dichloropropane	110		110		70-130	0		20
Dibromochloromethane	92		91		70-130	1		20
1,1,2-Trichloroethane	100		98		70-130	2		20
Tetrachloroethene	94		93		70-130	1		20
Chlorobenzene	99		97		70-130	2		20
Trichlorofluoromethane	100		100		70-130	0		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	100		100		70-130	0		20
Bromodichloromethane	100		100		70-130	0		20
trans-1,3-Dichloropropene	100		100		70-130	0		20
cis-1,3-Dichloropropene	100		100		70-130	0		20
1,1-Dichloropropene	110		110		70-130	0		20
Bromoform	82		80		70-130	2		20
1,1,2,2-Tetrachloroethane	97		94		70-130	3		20
Benzene	110		100		70-130	10		20
Toluene	100		100		70-130	0		20
Ethylbenzene	100		100		70-130	0		20
Chloromethane	100		110		70-130	10		20
Bromomethane	90		95		70-130	5		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432921

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02,12-13,16-17 Batch: WG1936533-3 WG1936533-4								
Vinyl chloride	99		98		70-130	1		20
Chloroethane	94		91		70-130	3		20
1,1-Dichloroethene	100		100		70-130	0		20
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	100		100		70-130	0		20
1,2-Dichlorobenzene	92		92		70-130	0		20
1,3-Dichlorobenzene	100		99		70-130	1		20
1,4-Dichlorobenzene	91		90		70-130	1		20
Methyl tert butyl ether	100		97		70-130	3		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	90		90		70-130	0		20
cis-1,2-Dichloroethene	100		100		70-130	0		20
Dibromomethane	97		95		70-130	2		20
1,2,3-Trichloropropane	100		96		70-130	4		20
Styrene	90		90		70-130	0		20
Dichlorodifluoromethane	83		84		70-130	1		20
Acetone	120		110		70-130	9		20
Carbon disulfide	100		100		70-130	0		20
Methyl ethyl ketone	120		100		70-130	18		20
Methyl isobutyl ketone	93		90		70-130	3		20
2-Hexanone	93		97		70-130	4		20
Bromochloromethane	100		100		70-130	0		20
Tetrahydrofuran	120		110		70-130	9		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432921

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02,12-13,16-17 Batch: WG1936533-3 WG1936533-4								
2,2-Dichloropropane	110		110		70-130	0		20
1,2-Dibromoethane	99		98		70-130	1		20
1,3-Dichloropropane	100		99		70-130	1		20
1,1,1,2-Tetrachloroethane	94		92		70-130	2		20
Bromobenzene	88		88		70-130	0		20
n-Butylbenzene	91		92		70-130	1		20
sec-Butylbenzene	91		94		70-130	3		20
tert-Butylbenzene	88		90		70-130	2		20
o-Chlorotoluene	100		100		70-130	0		20
p-Chlorotoluene	99		100		70-130	1		20
1,2-Dibromo-3-chloropropane	86		80		70-130	7		20
Hexachlorobutadiene	85		86		70-130	1		20
Isopropylbenzene	86		88		70-130	2		20
p-Isopropyltoluene	90		90		70-130	0		20
Naphthalene	76		75		70-130	1		20
n-Propylbenzene	98		98		70-130	0		20
1,2,3-Trichlorobenzene	86		83		70-130	4		20
1,2,4-Trichlorobenzene	85		82		70-130	4		20
1,3,5-Trimethylbenzene	97		97		70-130	0		20
1,2,4-Trimethylbenzene	90		92		70-130	2		20
Diethyl ether	100		95		70-130	5		20
Diisopropyl Ether	110		110		70-130	0		20
Ethyl-Tert-Butyl-Ether	100		100		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432921

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02,12-13,16-17 Batch: WG1936533-3 WG1936533-4								
Tertiary-Amyl Methyl Ether	97		96		70-130	1		20
1,4-Dioxane	84		74		70-130	13		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104		100		70-130
Toluene-d8	102		103		70-130
4-Bromofluorobenzene	101		102		70-130
Dibromofluoromethane	98		97		70-130

SEMIVOLATILES

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-01
Client ID: PFW-2
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 09:10
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 20:00
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	154		ng/l	5.87	0.939	1
Perfluoropentanoic Acid (PFPeA)	476		ng/l	2.93	0.785	1
Perfluorobutanesulfonic Acid (PFBS)	31.6		ng/l	1.47	0.491	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	6.32		ng/l	5.87	1.53	1
Perfluorohexanoic Acid (PFHxA)	696	E	ng/l	1.47	0.433	1
Perfluoropentanesulfonic Acid (PFPeS)	56.8		ng/l	1.47	0.257	1
Perfluoroheptanoic Acid (PFHpA)	212		ng/l	1.47	0.293	1
Perfluorohexanesulfonic Acid (PFHxS)	620	E	ng/l	1.47	0.352	1
Perfluorooctanoic Acid (PFOA)	330		ng/l	1.47	0.638	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1120		ng/l	5.87	1.98	1
Perfluoroheptanesulfonic Acid (PFHpS)	36.9		ng/l	1.47	0.396	1
Perfluorononanoic Acid (PFNA)	194		ng/l	1.47	0.462	1
Perfluorooctanesulfonic Acid (PFOS)	3550	E	ng/l	1.47	0.667	1
Perfluorodecanoic Acid (PFDA)	69.0		ng/l	1.47	0.594	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	1710		ng/l	5.87	2.28	1
Perfluorononanesulfonic Acid (PFNS)	11.7		ng/l	1.47	0.455	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.47	0.799	1
Perfluoroundecanoic Acid (PFUnA)	1200	E	ng/l	1.47	0.638	1
Perfluorodecanesulfonic Acid (PFDS)	7.70		ng/l	1.47	0.337	1
Perfluorooctanesulfonamide (PFOSA)	68.7		ng/l	1.47	0.396	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	1.44	J	ng/l	1.47	0.792	1
Perfluorododecanoic Acid (PFDoA)	10.8		ng/l	1.47	0.675	1
Perfluorotridecanoic Acid (PFTrDA)	6.02		ng/l	1.47	0.550	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.47	0.389	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.87	0.821	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.87	0.924	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.47	0.557	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-01 Date Collected: 06/11/24 09:10

Client ID: PFW-2 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.87	1.21	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.87	1.21	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.47	0.638	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.47	0.675	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.7	3.45	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.7	1.80	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.93	0.418	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.93	0.389	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.93	0.323	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.93	1.73	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	11.2		ng/l	7.33	2.42	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	42.5		ng/l	36.7	8.58	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.7	5.79	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-01 Date Collected: 06/11/24 09:10

Client ID: PFW-2 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	**35**	Q	41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	38		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	**35**	Q	41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	46		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	**36**	Q	40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	39		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	**32**	Q	46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	**34**	Q	39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	41		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	**34**	Q	38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	**31**	Q	32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	30		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	43		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	35		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	24		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	51		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	37		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	26		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	26		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	40		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	37		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	41		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	47		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	45		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-01 D
Client ID: PFW-2
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 09:10
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 16:56
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorohexanoic Acid (PFHxA)	572		ng/l	14.7	4.33	10
Perfluorohexanesulfonic Acid (PFHxS)	521		ng/l	14.7	3.52	10
Perfluorooctanesulfonic Acid (PFOS)	3290		ng/l	14.7	6.67	10
Perfluoroundecanoic Acid (PFUnA)	1280		ng/l	14.7	6.38	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	42		40-121
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	**38**	Q	46-115
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	**31**	Q	32-114
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	26		16-123

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-02
Client ID: PFW-5
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 09:20
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 20:38
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	29.6		ng/l	5.97	0.956	1
Perfluoropentanoic Acid (PFPeA)	92.2		ng/l	2.99	0.799	1
Perfluorobutanesulfonic Acid (PFBS)	56.7		ng/l	1.49	0.500	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.97	1.56	1
Perfluorohexanoic Acid (PFHxA)	191		ng/l	1.49	0.440	1
Perfluoropentanesulfonic Acid (PFPeS)	124		ng/l	1.49	0.261	1
Perfluoroheptanoic Acid (PFHpA)	76.8		ng/l	1.49	0.299	1
Perfluorohexanesulfonic Acid (PFHxS)	1120	E	ng/l	1.49	0.358	1
Perfluorooctanoic Acid (PFOA)	152		ng/l	1.49	0.650	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	14.3		ng/l	5.97	2.02	1
Perfluoroheptanesulfonic Acid (PFHpS)	20.0		ng/l	1.49	0.403	1
Perfluorononanoic Acid (PFNA)	22.5		ng/l	1.49	0.470	1
Perfluorooctanesulfonic Acid (PFOS)	1490	E	ng/l	1.49	0.679	1
Perfluorodecanoic Acid (PFDA)	7.24		ng/l	1.49	0.605	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	65.7		ng/l	5.97	2.32	1
Perfluorononanesulfonic Acid (PFNS)	1.19	J	ng/l	1.49	0.463	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.49	0.814	1
Perfluoroundecanoic Acid (PFUnA)	9.95		ng/l	1.49	0.650	1
Perfluorodecanesulfonic Acid (PFDS)	0.493	J	ng/l	1.49	0.343	1
Perfluorooctanesulfonamide (PFOSA)	59.6		ng/l	1.49	0.403	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.49	0.806	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.49	0.687	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.49	0.560	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.49	0.396	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.97	0.836	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.97	0.941	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.49	0.567	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-02 Date Collected: 06/11/24 09:20

Client ID: PFW-5 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.97	1.23	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.97	1.23	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.49	0.650	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.49	0.687	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.9	3.51	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.9	1.83	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.99	0.426	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.99	0.396	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.99	0.328	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.99	1.76	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.47	2.46	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.3	8.74	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.3	5.89	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-02 Date Collected: 06/11/24 09:20

Client ID: PFW-5 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	71		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	74		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	82		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	129		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	68		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	75		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	69		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	71		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	86		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	66		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	68		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	55		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	83		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	62		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	57		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	80		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	81		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	52		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	44		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	76		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	70		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	70		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	79		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	80		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-02 D
Client ID: PFW-5
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 09:20
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 17:34
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorohexanesulfonic Acid (PFHxS)	1070		ng/l	7.47	1.79	5
Perfluorooctanesulfonic Acid (PFOS)	1660		ng/l	7.47	3.40	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	63		46-115
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	53		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-03
Client ID: MW-305
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 11:15
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 20:51
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	149		ng/l	6.02	0.963	1
Perfluoropentanoic Acid (PFPeA)	490		ng/l	3.01	0.805	1
Perfluorobutanesulfonic Acid (PFBS)	45.8		ng/l	1.50	0.504	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.02	1.57	1
Perfluorohexanoic Acid (PFHxA)	370		ng/l	1.50	0.444	1
Perfluoropentanesulfonic Acid (PFPeS)	92.2		ng/l	1.50	0.263	1
Perfluoroheptanoic Acid (PFHpA)	134		ng/l	1.50	0.301	1
Perfluorohexanesulfonic Acid (PFHxS)	1290	E	ng/l	1.50	0.361	1
Perfluorooctanoic Acid (PFOA)	271		ng/l	1.50	0.655	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	30.5		ng/l	6.02	2.03	1
Perfluoroheptanesulfonic Acid (PFHpS)	49.0		ng/l	1.50	0.406	1
Perfluorononanoic Acid (PFNA)	154		ng/l	1.50	0.474	1
Perfluorooctanesulfonic Acid (PFOS)	1410	E	ng/l	1.50	0.685	1
Perfluorodecanoic Acid (PFDA)	8.81		ng/l	1.50	0.610	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	3.33	J	ng/l	6.02	2.34	1
Perfluorononanesulfonic Acid (PFNS)	1.21	J	ng/l	1.50	0.466	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.50	0.820	1
Perfluoroundecanoic Acid (PFUnA)	2.03		ng/l	1.50	0.655	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.50	0.346	1
Perfluorooctanesulfonamide (PFOSA)	1.72	F	ng/l	1.50	0.406	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.50	0.813	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.50	0.692	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.50	0.564	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.50	0.399	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.02	0.843	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.02	0.948	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.50	0.572	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-03 Date Collected: 06/11/24 11:15

Client ID: MW-305 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.02	1.24	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.02	1.24	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.50	0.655	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.50	0.692	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.0	3.54	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.0	1.84	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.01	0.429	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.01	0.399	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.01	0.331	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.01	1.78	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.52	2.48	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.6	8.80	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.6	5.94	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-03 Date Collected: 06/11/24 11:15

Client ID: MW-305 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	70		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	62		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	83		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	170		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	68		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	78		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	68		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	71		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	104		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	65		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	67		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	60		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	106		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	61		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	57		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	74		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	78		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	54		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	48		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	77		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	62		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	62		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	72		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	67		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-03 D
Client ID: MW-305
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 11:15
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 17:47
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorohexanesulfonic Acid (PFHxS)	1240		ng/l	7.52	1.81	5
Perfluorooctanesulfonic Acid (PFOS)	1420		ng/l	7.52	3.42	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	64		46-115
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	59		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-04
Client ID: PC-34S
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 10:25
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 14:37
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	117		ng/l	5.96	0.954	1
Perfluoropentanoic Acid (PFPeA)	301		ng/l	2.98	0.797	1
Perfluorobutanesulfonic Acid (PFBS)	9.96		ng/l	1.49	0.499	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.96	1.56	1
Perfluorohexanoic Acid (PFHxA)	197		ng/l	1.49	0.440	1
Perfluoropentanesulfonic Acid (PFPeS)	18.8		ng/l	1.49	0.261	1
Perfluoroheptanoic Acid (PFHpA)	118		ng/l	1.49	0.298	1
Perfluorohexanesulfonic Acid (PFHxS)	332		ng/l	1.49	0.358	1
Perfluorooctanoic Acid (PFOA)	79.1		ng/l	1.49	0.648	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	6.57		ng/l	5.96	2.01	1
Perfluoroheptanesulfonic Acid (PFHpS)	8.04		ng/l	1.49	0.402	1
Perfluorononanoic Acid (PFNA)	34.3		ng/l	1.49	0.469	1
Perfluorooctanesulfonic Acid (PFOS)	253		ng/l	1.49	0.678	1
Perfluorodecanoic Acid (PFDA)	3.15		ng/l	1.49	0.604	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	2.62	J	ng/l	5.96	2.32	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.49	0.462	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.49	0.812	1
Perfluoroundecanoic Acid (PFUnA)	6.20		ng/l	1.49	0.648	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.49	0.343	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.49	0.402	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.49	0.805	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.49	0.686	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.49	0.559	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.49	0.395	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.96	0.834	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.96	0.939	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.49	0.566	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-04 Date Collected: 06/11/24 10:25

Client ID: PC-34S Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.96	1.23	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.96	1.23	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.49	0.648	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.49	0.686	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.9	3.50	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.9	1.82	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.98	0.425	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.98	0.395	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.98	0.328	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.98	1.76	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.45	2.46	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.2	8.72	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.2	5.88	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-04 Date Collected: 06/11/24 10:25

Client ID: PC-34S Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	57		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	61		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	57		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	86		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	53		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	59		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	55		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	52		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	69		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	56		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	50		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	49		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	42		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	70		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	41		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	40		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	53		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	37		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	32		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	59		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	52		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	49		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	46		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	51		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-05
Client ID: PC-34D
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 11:10
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 21:04
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	45.6		ng/l	5.78	0.925	1
Perfluoropentanoic Acid (PFPeA)	87.3		ng/l	2.89	0.773	1
Perfluorobutanesulfonic Acid (PFBS)	8.84		ng/l	1.44	0.484	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.78	1.51	1
Perfluorohexanoic Acid (PFHxA)	88.8		ng/l	1.44	0.426	1
Perfluoropentanesulfonic Acid (PFPeS)	14.1		ng/l	1.44	0.253	1
Perfluoroheptanoic Acid (PFHpA)	66.5		ng/l	1.44	0.289	1
Perfluorohexanesulfonic Acid (PFHxS)	145		ng/l	1.44	0.347	1
Perfluorooctanoic Acid (PFOA)	86.9		ng/l	1.44	0.628	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	42.2		ng/l	5.78	1.95	1
Perfluoroheptanesulfonic Acid (PFHpS)	15.6		ng/l	1.44	0.390	1
Perfluorononanoic Acid (PFNA)	216		ng/l	1.44	0.455	1
Perfluorooctanesulfonic Acid (PFOS)	1070	E	ng/l	1.44	0.657	1
Perfluorodecanoic Acid (PFDA)	10.7		ng/l	1.44	0.585	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	9.94		ng/l	5.78	2.25	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.44	0.448	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.44	0.788	1
Perfluoroundecanoic Acid (PFUnA)	6.76		ng/l	1.44	0.628	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.44	0.332	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.44	0.390	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.44	0.780	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.44	0.665	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.44	0.542	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.44	0.383	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.78	0.809	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.78	0.910	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.44	0.549	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-05 Date Collected: 06/11/24 11:10

Client ID: PC-34D Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.78	1.19	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.78	1.19	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.44	0.628	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.44	0.665	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.4	3.40	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.4	1.77	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.89	0.412	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.89	0.383	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.89	0.318	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.89	1.70	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.22	2.38	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.1	8.45	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.1	5.70	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-05 Date Collected: 06/11/24 11:10

Client ID: PC-34D Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	68		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	65		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	68		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	135		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	66		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	70		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	65		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	65		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	84		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	65		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	62		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	60		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	87		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	53		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	52		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	75		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	67		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	48		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	41		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	70		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	64		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	67		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	73		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	73		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-05 D
Client ID: PC-34D
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 11:10
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 18:00
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	1150		ng/l	7.22	3.29	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	45		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-06
Client ID: PC-35S
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 11:11
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 15:03
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	63.6		ng/l	5.71	0.914	1
Perfluoropentanoic Acid (PFPeA)	102		ng/l	2.85	0.764	1
Perfluorobutanesulfonic Acid (PFBS)	4.63		ng/l	1.43	0.478	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.71	1.49	1
Perfluorohexanoic Acid (PFHxA)	68.6		ng/l	1.43	0.421	1
Perfluoropentanesulfonic Acid (PFPeS)	7.65		ng/l	1.43	0.250	1
Perfluoroheptanoic Acid (PFHpA)	66.1		ng/l	1.43	0.285	1
Perfluorohexanesulfonic Acid (PFHxS)	88.9		ng/l	1.43	0.342	1
Perfluorooctanoic Acid (PFOA)	77.8		ng/l	1.43	0.621	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	5.71		ng/l	5.71	1.93	1
Perfluoroheptanesulfonic Acid (PFHpS)	4.34		ng/l	1.43	0.385	1
Perfluorononanoic Acid (PFNA)	65.7		ng/l	1.43	0.450	1
Perfluorooctanesulfonic Acid (PFOS)	360		ng/l	1.43	0.649	1
Perfluorodecanoic Acid (PFDA)	9.45		ng/l	1.43	0.578	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	4.19	J	ng/l	5.71	2.22	1
Perfluorononanesulfonic Acid (PFNS)	0.442	JF	ng/l	1.43	0.442	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.43	0.778	1
Perfluoroundecanoic Acid (PFUnA)	11.9		ng/l	1.43	0.621	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.43	0.328	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.43	0.385	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.43	0.771	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.43	0.657	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.43	0.535	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.43	0.378	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.71	0.799	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.71	0.899	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.43	0.542	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-06 Date Collected: 06/11/24 11:11

Client ID: PC-35S Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.71	1.18	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.71	1.18	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.43	0.621	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.43	0.657	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.3	3.35	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.3	1.75	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.85	0.407	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.85	0.378	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.85	0.314	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.85	1.68	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.14	2.36	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	35.7	8.35	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	35.7	5.63	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-06 Date Collected: 06/11/24 11:11

Client ID: PC-35S Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	74		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	79		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	82		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	148		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	74		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	73		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	77		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	64		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	95		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	76		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	63		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	62		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	61		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	94		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	54		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	60		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	74		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	49		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	43		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	75		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	67		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	69		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	69		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	69		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-07
Client ID: PC-35D
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 12:18
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 21:17
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	89.1		ng/l	5.84	0.935	1
Perfluoropentanoic Acid (PFPeA)	134		ng/l	2.92	0.782	1
Perfluorobutanesulfonic Acid (PFBS)	6.62		ng/l	1.46	0.489	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.84	1.53	1
Perfluorohexanoic Acid (PFHxA)	100		ng/l	1.46	0.431	1
Perfluoropentanesulfonic Acid (PFPeS)	11.0		ng/l	1.46	0.256	1
Perfluoroheptanoic Acid (PFHpA)	82.1		ng/l	1.46	0.292	1
Perfluorohexanesulfonic Acid (PFHxS)	128		ng/l	1.46	0.351	1
Perfluorooctanoic Acid (PFOA)	83.8		ng/l	1.46	0.636	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	20.8		ng/l	5.84	1.97	1
Perfluoroheptanesulfonic Acid (PFHpS)	5.61		ng/l	1.46	0.394	1
Perfluorononanoic Acid (PFNA)	77.6		ng/l	1.46	0.460	1
Perfluorooctanesulfonic Acid (PFOS)	589	E	ng/l	1.46	0.665	1
Perfluorodecanoic Acid (PFDA)	8.42		ng/l	1.46	0.592	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	6.57		ng/l	5.84	2.27	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.46	0.453	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.46	0.796	1
Perfluoroundecanoic Acid (PFUnA)	8.37		ng/l	1.46	0.636	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.46	0.336	1
Perfluorooctanesulfonamide (PFOSA)	0.950	JF	ng/l	1.46	0.394	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.46	0.789	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.46	0.672	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.46	0.548	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.46	0.387	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.84	0.818	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.84	0.920	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.46	0.555	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-07 Date Collected: 06/11/24 12:18

Client ID: PC-35D Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.84	1.20	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.84	1.20	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.46	0.636	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.46	0.672	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.6	3.43	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.6	1.79	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.92	0.416	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.92	0.387	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.92	0.321	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.92	1.72	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.30	2.41	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.5	8.55	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.5	5.76	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-07 Date Collected: 06/11/24 12:18

Client ID: PC-35D Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	74		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	68		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	74		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	149		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	73		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	76		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	70		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	69		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	89		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	66		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	63		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	59		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	87		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	60		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	58		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	68		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	68		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	54		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	46		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	75		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	62		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	61		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	69		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	70		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-07 D
Client ID: PC-35D
Sample Location: 155 S. FLINT ROCK ROAD

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 18:13
Analyst: JW

Date Collected: 06/11/24 12:18
Date Received: 06/12/24
Field Prep: Not Specified

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	602		ng/l	7.30	3.32	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	51		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-08
Client ID: PC-36S
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 12:50
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 15:29
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.49	J	ng/l	5.71	0.914	1
Perfluoropentanoic Acid (PFPeA)	2.68	J	ng/l	2.86	0.764	1
Perfluorobutanesulfonic Acid (PFBS)	2.36		ng/l	1.43	0.478	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.71	1.49	1
Perfluorohexanoic Acid (PFHxA)	2.40		ng/l	1.43	0.421	1
Perfluoropentanesulfonic Acid (PFPeS)	1.50		ng/l	1.43	0.250	1
Perfluoroheptanoic Acid (PFHpA)	2.48		ng/l	1.43	0.286	1
Perfluorohexanesulfonic Acid (PFHxS)	10.2		ng/l	1.43	0.343	1
Perfluorooctanoic Acid (PFOA)	2.36		ng/l	1.43	0.621	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.71	1.93	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.43	0.386	1
Perfluorononanoic Acid (PFNA)	2.03		ng/l	1.43	0.450	1
Perfluorooctanesulfonic Acid (PFOS)	28.1		ng/l	1.43	0.650	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.43	0.578	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.71	2.22	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.43	0.443	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.43	0.778	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.43	0.621	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.43	0.328	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.43	0.386	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.43	0.771	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.43	0.657	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.43	0.536	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.43	0.378	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.71	0.800	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.71	0.900	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.43	0.543	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-08 Date Collected: 06/11/24 12:50

Client ID: PC-36S Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.71	1.18	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.71	1.18	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.43	0.621	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.43	0.657	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.3	3.36	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.3	1.75	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.86	0.407	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.86	0.378	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.86	0.314	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.86	1.68	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.14	2.36	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	35.7	8.35	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	35.7	5.63	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-08 Date Collected: 06/11/24 12:50

Client ID: PC-36S Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	66		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	83		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	73		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	88		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	73		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	73		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	74		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	66		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	84		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	76		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	58		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	72		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	57		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	76		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	59		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	56		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	64		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	59		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	53		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	74		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	59		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	65		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	65		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	67		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-09
Client ID: PC-36D
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 13:40
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 21:29
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	27.3		ng/l	5.81	0.930	1
Perfluoropentanoic Acid (PFPeA)	76.3		ng/l	2.91	0.777	1
Perfluorobutanesulfonic Acid (PFBS)	9.61		ng/l	1.45	0.487	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.81	1.52	1
Perfluorohexanoic Acid (PFHxA)	98.6		ng/l	1.45	0.429	1
Perfluoropentanesulfonic Acid (PFPeS)	9.54		ng/l	1.45	0.254	1
Perfluoroheptanoic Acid (PFHpA)	53.9		ng/l	1.45	0.291	1
Perfluorohexanesulfonic Acid (PFHxS)	79.6		ng/l	1.45	0.349	1
Perfluorooctanoic Acid (PFOA)	48.7		ng/l	1.45	0.632	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	32.4		ng/l	5.81	1.96	1
Perfluoroheptanesulfonic Acid (PFHpS)	4.98		ng/l	1.45	0.392	1
Perfluorononanoic Acid (PFNA)	65.7		ng/l	1.45	0.458	1
Perfluorooctanesulfonic Acid (PFOS)	454	E	ng/l	1.45	0.661	1
Perfluorodecanoic Acid (PFDA)	8.09		ng/l	1.45	0.588	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	6.42		ng/l	5.81	2.26	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.45	0.450	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.45	0.792	1
Perfluoroundecanoic Acid (PFUnA)	23.6		ng/l	1.45	0.632	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.45	0.334	1
Perfluorooctanesulfonamide (PFOSA)	1.60		ng/l	1.45	0.392	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.45	0.785	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.45	0.668	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.45	0.545	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.45	0.385	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.81	0.814	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.81	0.916	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.45	0.552	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-09 Date Collected: 06/11/24 13:40

Client ID: PC-36D Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.81	1.20	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.81	1.20	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.45	0.632	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.45	0.668	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.5	3.42	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.5	1.78	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.91	0.414	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.91	0.385	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.91	0.320	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.91	1.71	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.27	2.40	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.3	8.50	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.3	5.73	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-09 Date Collected: 06/11/24 13:40

Client ID: PC-36D Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	82		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	74		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	82		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	176		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	76		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	82		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	80		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	79		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	97		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	75		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	78		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	64		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	100		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	69		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	62		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	82		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	84		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	62		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	46		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	81		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	69		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	71		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	82		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	79		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-09 D
Client ID: PC-36D
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 13:40
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 18:25
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	520		ng/l	7.27	3.31	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	51		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-10
Client ID: MW-311
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 14:25
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 21:42
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	116		ng/l	5.99	0.959	1
Perfluoropentanoic Acid (PFPeA)	415		ng/l	3.00	0.802	1
Perfluorobutanesulfonic Acid (PFBS)	41.2		ng/l	1.50	0.502	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.99	1.56	1
Perfluorohexanoic Acid (PFHxA)	328		ng/l	1.50	0.442	1
Perfluoropentanesulfonic Acid (PFPeS)	82.4		ng/l	1.50	0.262	1
Perfluoroheptanoic Acid (PFHpA)	211		ng/l	1.50	0.300	1
Perfluorohexanesulfonic Acid (PFHxS)	822	E	ng/l	1.50	0.360	1
Perfluorooctanoic Acid (PFOA)	198		ng/l	1.50	0.652	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	337		ng/l	5.99	2.02	1
Perfluoroheptanesulfonic Acid (PFHpS)	47.1		ng/l	1.50	0.404	1
Perfluorononanoic Acid (PFNA)	65.1		ng/l	1.50	0.472	1
Perfluorooctanesulfonic Acid (PFOS)	4580	E	ng/l	1.50	0.682	1
Perfluorodecanoic Acid (PFDA)	29.6		ng/l	1.50	0.607	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	425		ng/l	5.99	2.33	1
Perfluorononanesulfonic Acid (PFNS)	8.50		ng/l	1.50	0.464	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.50	0.816	1
Perfluoroundecanoic Acid (PFUnA)	53.9		ng/l	1.50	0.652	1
Perfluorodecanesulfonic Acid (PFDS)	0.689	J	ng/l	1.50	0.345	1
Perfluorooctanesulfonamide (PFOSA)	15.8		ng/l	1.50	0.404	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.50	0.809	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.50	0.689	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.50	0.562	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.50	0.397	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.99	0.839	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.99	0.944	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.50	0.569	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-10 Date Collected: 06/11/24 14:25

Client ID: MW-311 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.99	1.24	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.99	1.24	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.50	0.652	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.50	0.689	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.0	3.52	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.0	1.84	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.00	0.427	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.00	0.397	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.00	0.330	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.00	1.77	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.49	2.47	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.4	8.76	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.4	5.91	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-10 Date Collected: 06/11/24 14:25

Client ID: MW-311 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	53		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	58		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	54		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	91		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	54		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	60		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	51		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	51		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	62		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	50		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	52		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	48		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	63		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	58		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	50		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	88		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	88		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	47		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	41		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	64		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	76		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	82		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	95		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	96		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-10 RE
Client ID: MW-311
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/11/24 14:25
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/03/24 00:10
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 07/02/24 13:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	4240		ng/l	32.0	14.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	60		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-10 D
Client ID: MW-311
Sample Location: 155 S. FLINT ROCK ROAD

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 21:25
Analyst: JW

Date Collected: 06/11/24 14:25
Date Received: 06/12/24
Field Prep: Not Specified

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorohexanesulfonic Acid (PFHxS)	754		ng/l	7.49	1.80	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	**41**	Q	46-115

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-11
Client ID: OW-2D
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 16:30
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/02/24 07:14
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:46

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.29	J	ng/l	5.84	0.934	1
Perfluoropentanoic Acid (PFPeA)	3.22		ng/l	2.92	0.781	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.46	0.489	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.84	1.52	1
Perfluorohexanoic Acid (PFHxA)	1.39	J	ng/l	1.46	0.431	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.46	0.256	1
Perfluoroheptanoic Acid (PFHpA)	2.36		ng/l	1.46	0.292	1
Perfluorohexanesulfonic Acid (PFHxS)	1.33	J	ng/l	1.46	0.350	1
Perfluorooctanoic Acid (PFOA)	5.11		ng/l	1.46	0.635	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	3.61	J	ng/l	5.84	1.97	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.46	0.394	1
Perfluorononanoic Acid (PFNA)	1.66		ng/l	1.46	0.460	1
Perfluorooctanesulfonic Acid (PFOS)	4.20		ng/l	1.46	0.664	1
Perfluorodecanoic Acid (PFDA)	2.34		ng/l	1.46	0.591	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	10.9		ng/l	5.84	2.27	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.46	0.453	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.46	0.796	1
Perfluoroundecanoic Acid (PFUnA)	0.767	J	ng/l	1.46	0.635	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.46	0.336	1
Perfluorooctanesulfonamide (PFOSA)	1.06	J	ng/l	1.46	0.394	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.46	0.788	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.46	0.672	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.46	0.548	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.46	0.387	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.84	0.818	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.84	0.920	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.46	0.555	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-11 Date Collected: 06/10/24 16:30

Client ID: OW-2D Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.84	1.20	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.84	1.20	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.46	0.635	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.46	0.672	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.6	3.43	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.6	1.79	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.92	0.416	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.92	0.387	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.92	0.321	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.92	1.72	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.30	2.41	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.5	8.54	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.5	5.76	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-11 Date Collected: 06/10/24 16:30

Client ID: OW-2D Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	75		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	80		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	74		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	111		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	75		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	77		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	74		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	73		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	79		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	73		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	75		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	64		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	83		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	65		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	59		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	65		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	67		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	59		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	51		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	75		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	53		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	56		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	66		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	66		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-12
Client ID: OW-2S
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 17:55
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 21:55
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:46

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	45.2		ng/l	5.91	0.946	1
Perfluoropentanoic Acid (PFPeA)	135		ng/l	2.96	0.790	1
Perfluorobutanesulfonic Acid (PFBS)	20.2		ng/l	1.48	0.495	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.91	1.54	1
Perfluorohexanoic Acid (PFHxA)	130		ng/l	1.48	0.436	1
Perfluoropentanesulfonic Acid (PFPeS)	42.2		ng/l	1.48	0.258	1
Perfluoroheptanoic Acid (PFHpA)	71.5		ng/l	1.48	0.296	1
Perfluorohexanesulfonic Acid (PFHxS)	1700	E	ng/l	1.48	0.355	1
Perfluorooctanoic Acid (PFOA)	411		ng/l	1.48	0.643	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	6.63		ng/l	5.91	1.99	1
Perfluoroheptanesulfonic Acid (PFHpS)	23.0		ng/l	1.48	0.399	1
Perfluorononanoic Acid (PFNA)	22.8		ng/l	1.48	0.465	1
Perfluorooctanesulfonic Acid (PFOS)	701	E	ng/l	1.48	0.672	1
Perfluorodecanoic Acid (PFDA)	3.61		ng/l	1.48	0.598	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	2.76	J	ng/l	5.91	2.30	1
Perfluorononanesulfonic Acid (PFNS)	0.709	J	ng/l	1.48	0.458	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.48	0.805	1
Perfluoroundecanoic Acid (PFUnA)	9.20		ng/l	1.48	0.643	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.48	0.340	1
Perfluorooctanesulfonamide (PFOSA)	345		ng/l	1.48	0.399	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.48	0.798	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.48	0.680	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.48	0.554	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.48	0.392	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.91	0.827	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.91	0.931	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.48	0.562	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-12 Date Collected: 06/10/24 17:55

Client ID: OW-2S Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.91	1.22	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.91	1.22	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	3.04		ng/l	1.48	0.643	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.48	0.680	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.8	3.47	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.8	1.81	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.96	0.421	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.96	0.392	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.96	0.325	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.96	1.74	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.39	2.44	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.9	8.64	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.9	5.83	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-12 Date Collected: 06/10/24 17:55

Client ID: OW-2S Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	69		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	71		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	84		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	137		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	68		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	76		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	64		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	66		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	96		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	66		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	62		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	54		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	86		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	54		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	47		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	69		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	64		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	48		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	44		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	77		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	56		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	58		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	68		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	67		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-12 D
Client ID: OW-2S
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 17:55
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 21:51
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:46

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorohexanesulfonic Acid (PFHxS)	1610		ng/l	7.39	1.77	5
Perfluorooctanesulfonic Acid (PFOS)	725		ng/l	7.39	3.36	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	52		46-115
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	46		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-13
Client ID: OW-8A
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 14:45
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 22:08
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	53.9		ng/l	6.15	0.984	1
Perfluoropentanoic Acid (PFPeA)	185		ng/l	3.07	0.822	1
Perfluorobutanesulfonic Acid (PFBS)	28.2		ng/l	1.54	0.515	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.15	1.61	1
Perfluorohexanoic Acid (PFHxA)	214		ng/l	1.54	0.454	1
Perfluoropentanesulfonic Acid (PFPeS)	42.0		ng/l	1.54	0.269	1
Perfluoroheptanoic Acid (PFHpA)	158		ng/l	1.54	0.307	1
Perfluorohexanesulfonic Acid (PFHxS)	1130	E	ng/l	1.54	0.369	1
Perfluorooctanoic Acid (PFOA)	451		ng/l	1.54	0.669	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	32.3		ng/l	6.15	2.08	1
Perfluoroheptanesulfonic Acid (PFHpS)	22.6		ng/l	1.54	0.415	1
Perfluorononanoic Acid (PFNA)	65.2		ng/l	1.54	0.484	1
Perfluorooctanesulfonic Acid (PFOS)	1190	E	ng/l	1.54	0.700	1
Perfluorodecanoic Acid (PFDA)	11.4		ng/l	1.54	0.623	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	8.86		ng/l	6.15	2.39	1
Perfluorononanesulfonic Acid (PFNS)	1.57		ng/l	1.54	0.477	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.54	0.838	1
Perfluoroundecanoic Acid (PFUnA)	59.3		ng/l	1.54	0.669	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.54	0.354	1
Perfluorooctanesulfonamide (PFOSA)	21.9	F	ng/l	1.54	0.415	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.54	0.830	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.54	0.707	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.54	0.576	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.54	0.407	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.15	0.861	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.15	0.968	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.54	0.584	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-13 Date Collected: 06/10/24 14:45

Client ID: OW-8A Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.15	1.27	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.15	1.27	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.54	0.669	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.54	0.707	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.4	3.61	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.4	1.88	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.07	0.438	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.07	0.407	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.07	0.338	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.07	1.81	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.69	2.54	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	38.4	8.99	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	38.4	6.06	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-13 Date Collected: 06/10/24 14:45

Client ID: OW-8A Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	69		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	65		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	75		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	165		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	68		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	76		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	66		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	69		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	127		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	67		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	65		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	60		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	113		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	61		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	58		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	74		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	75		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	55		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	46		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	72		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	57		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	57		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	65		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	64		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-13 D
Client ID: OW-8A
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 14:45
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/02/24 07:27
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorohexanesulfonic Acid (PFHxS)	1110		ng/l	7.69	1.84	5
Perfluorooctanesulfonic Acid (PFOS)	1050		ng/l	7.69	3.50	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	46		46-115
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	48		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-14
Client ID: OW-8D
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 13:10
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 17:33
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	12.7		ng/l	5.89	0.942	1
Perfluoropentanoic Acid (PFPeA)	47.4		ng/l	2.94	0.788	1
Perfluorobutanesulfonic Acid (PFBS)	6.96		ng/l	1.47	0.493	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.89	1.54	1
Perfluorohexanoic Acid (PFHxA)	42.2		ng/l	1.47	0.434	1
Perfluoropentanesulfonic Acid (PFPeS)	9.80		ng/l	1.47	0.258	1
Perfluoroheptanoic Acid (PFHpA)	26.8		ng/l	1.47	0.294	1
Perfluorohexanesulfonic Acid (PFHxS)	151		ng/l	1.47	0.353	1
Perfluorooctanoic Acid (PFOA)	40.9		ng/l	1.47	0.641	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	5.17	J	ng/l	5.89	1.99	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.83		ng/l	1.47	0.398	1
Perfluorononanoic Acid (PFNA)	7.45		ng/l	1.47	0.464	1
Perfluorooctanesulfonic Acid (PFOS)	142		ng/l	1.47	0.670	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.47	0.596	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.89	2.29	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.47	0.456	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.47	0.803	1
Perfluoroundecanoic Acid (PFUnA)	1.86		ng/l	1.47	0.641	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.47	0.339	1
Perfluorooctanesulfonamide (PFOSA)	1.67		ng/l	1.47	0.398	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.47	0.795	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.47	0.677	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.47	0.552	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.47	0.390	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.89	0.825	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.89	0.928	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.47	0.560	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-14 Date Collected: 06/10/24 13:10

Client ID: OW-8D Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.89	1.21	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.89	1.21	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.47	0.641	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.47	0.677	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.7	3.46	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.7	1.80	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.94	0.420	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.94	0.390	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.94	0.324	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.94	1.74	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.36	2.43	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.8	8.62	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.8	5.81	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-14 Date Collected: 06/10/24 13:10

Client ID: OW-8D Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	69		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	82		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	82		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	86		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	71		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	73		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	73		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	64		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	90		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	69		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	66		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	70		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	72		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	119		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	63		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	66		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	87		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	58		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	51		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	71		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	72		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	78		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	81		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	83		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-15
Client ID: PC-37
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 14:10
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 17:46
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	4.30	J	ng/l	5.78	0.925	1
Perfluoropentanoic Acid (PFPeA)	9.07		ng/l	2.89	0.773	1
Perfluorobutanesulfonic Acid (PFBS)	3.42		ng/l	1.44	0.484	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.78	1.51	1
Perfluorohexanoic Acid (PFHxA)	11.4		ng/l	1.44	0.426	1
Perfluoropentanesulfonic Acid (PFPeS)	4.56		ng/l	1.44	0.253	1
Perfluoroheptanoic Acid (PFHpA)	6.37		ng/l	1.44	0.289	1
Perfluorohexanesulfonic Acid (PFHxS)	53.8		ng/l	1.44	0.347	1
Perfluorooctanoic Acid (PFOA)	6.54		ng/l	1.44	0.628	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	6.31		ng/l	5.78	1.95	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.06		ng/l	1.44	0.390	1
Perfluorononanoic Acid (PFNA)	0.852	J	ng/l	1.44	0.455	1
Perfluorooctanesulfonic Acid (PFOS)	26.9		ng/l	1.44	0.657	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.44	0.585	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.78	2.25	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.44	0.448	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.44	0.787	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.44	0.628	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.44	0.332	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.44	0.390	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.44	0.780	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.44	0.665	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.44	0.542	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.44	0.383	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.78	0.809	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.78	0.910	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.44	0.549	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-15 Date Collected: 06/10/24 14:10

Client ID: PC-37 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.78	1.19	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.78	1.19	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.44	0.628	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.44	0.665	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.4	3.40	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.4	1.77	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.89	0.412	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.89	0.383	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.89	0.318	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.89	1.70	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.22	2.38	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.1	8.45	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.1	5.70	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-15 Date Collected: 06/10/24 14:10

Client ID: PC-37 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	70		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	76		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	75		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	125		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	71		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	72		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	67		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	64		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	83		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	67		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	58		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	53		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	49		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	78		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	46		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	48		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	62		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	49		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	43		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	69		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	58		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	55		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	60		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	61		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-16
Client ID: PFW-1
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 16:25
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 22:20
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	112		ng/l	5.95	0.952	1
Perfluoropentanoic Acid (PFPeA)	463		ng/l	2.98	0.796	1
Perfluorobutanesulfonic Acid (PFBS)	72.8		ng/l	1.49	0.498	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	3.26	J	ng/l	5.95	1.55	1
Perfluorohexanoic Acid (PFHxA)	522	E	ng/l	1.49	0.439	1
Perfluoropentanesulfonic Acid (PFPeS)	190		ng/l	1.49	0.260	1
Perfluoroheptanoic Acid (PFHpA)	265		ng/l	1.49	0.298	1
Perfluorohexanesulfonic Acid (PFHxS)	1860	E	ng/l	1.49	0.357	1
Perfluorooctanoic Acid (PFOA)	486	E	ng/l	1.49	0.647	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1080		ng/l	5.95	2.01	1
Perfluoroheptanesulfonic Acid (PFHpS)	278		ng/l	1.49	0.402	1
Perfluorononanoic Acid (PFNA)	92.0		ng/l	1.49	0.469	1
Perfluorooctanesulfonic Acid (PFOS)	31600	E	ng/l	1.49	0.677	1
Perfluorodecanoic Acid (PFDA)	80.9		ng/l	1.49	0.602	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	1520		ng/l	5.95	2.31	1
Perfluorononanesulfonic Acid (PFNS)	29.5		ng/l	1.49	0.461	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.49	0.811	1
Perfluoroundecanoic Acid (PFUnA)	39.7		ng/l	1.49	0.647	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.49	0.342	1
Perfluorooctanesulfonamide (PFOSA)	16.8		ng/l	1.49	0.402	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.49	0.803	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.49	0.684	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.49	0.558	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.49	0.394	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.95	0.833	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.95	0.937	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.49	0.565	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-16 Date Collected: 06/10/24 16:25

Client ID: PFW-1 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.95	1.23	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.95	1.23	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.49	0.647	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.49	0.684	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.9	3.50	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.9	1.82	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.98	0.424	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.98	0.394	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.98	0.327	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.98	1.76	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.44	2.45	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.2	8.70	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.2	5.87	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-16 Date Collected: 06/10/24 16:25

Client ID: PFW-1 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	76		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	80		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	86		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	140		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	77		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	83		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	70		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	70		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	104		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	70		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	72		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	68		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	109		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	104		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	95		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	**212**	Q	14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	**210**	Q	10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	81		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	82		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	90		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	**195**	Q	11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	**198**	Q	11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	**230**	Q	10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	**228**	Q	10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-16 RE
Client ID: PFW-1
Sample Location: 155 S. FLINT ROCK ROAD

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/03/24 00:23
Analyst: ANH

Date Collected: 06/10/24 16:25
Date Received: 06/12/24
Field Prep: Not Specified

Extraction Method: EPA 1633
Extraction Date: 07/02/24 13:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	32600		ng/l	160	72.8	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	61		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-16 D
Client ID: PFW-1
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 16:25
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 22:03
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorohexanoic Acid (PFHxA)	588		ng/l	7.44	2.19	5
Perfluorohexanesulfonic Acid (PFHxS)	1770		ng/l	7.44	1.78	5
Perfluorooctanoic Acid (PFOA)	391		ng/l	7.44	3.24	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	54		40-121
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	54		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	74		39-121

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-18
Client ID: VDT-01
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 16:15
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 22:59
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.23	0.997	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.12	0.834	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.56	0.522	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.23	1.63	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.56	0.460	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.56	0.273	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.56	0.312	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.56	0.374	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.56	0.678	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.23	2.10	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.56	0.421	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.56	0.491	1
Perfluorooctanesulfonic Acid (PFOS)	0.943	JF	ng/l	1.56	0.709	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.56	0.631	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.23	2.42	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.56	0.483	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.56	0.849	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.56	0.678	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.56	0.358	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.56	0.421	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.56	0.841	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.56	0.717	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.56	0.584	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.56	0.413	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.23	0.872	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.23	0.982	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.56	0.592	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-18 Date Collected: 06/10/24 16:15

Client ID: VDT-01 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.23	1.28	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.23	1.28	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.56	0.678	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.56	0.717	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.6	3.66	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.6	1.91	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.12	0.444	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.12	0.413	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.12	0.343	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.12	1.84	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.79	2.57	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	39.0	9.11	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	39.0	6.15	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-18 Date Collected: 06/10/24 16:15

Client ID: VDT-01 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	72		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	73		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	72		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	102		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	70		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	75		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	70		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	70		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	77		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	66		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	69		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	61		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	77		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	61		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	58		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	72		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	65		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	56		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	43		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	74		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	64		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	64		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	72		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	73		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-19
Client ID: VDT-03
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/10/24 12:45
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/01/24 18:25
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.45	1.03	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.22	0.863	1
Perfluorobutanesulfonic Acid (PFBS)	0.669	J	ng/l	1.61	0.540	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.45	1.68	1
Perfluorohexanoic Acid (PFHxA)	2.31		ng/l	1.61	0.476	1
Perfluoropentanesulfonic Acid (PFPeS)	0.830	J	ng/l	1.61	0.282	1
Perfluoroheptanoic Acid (PFHpA)	1.30	J	ng/l	1.61	0.322	1
Perfluorohexanesulfonic Acid (PFHxS)	17.2		ng/l	1.61	0.387	1
Perfluorooctanoic Acid (PFOA)	3.73		ng/l	1.61	0.701	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	16.7		ng/l	6.45	2.18	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.863	J	ng/l	1.61	0.435	1
Perfluorononanoic Acid (PFNA)	0.863	J	ng/l	1.61	0.508	1
Perfluorooctanesulfonic Acid (PFOS)	65.4		ng/l	1.61	0.734	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.61	0.653	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	2.98	J	ng/l	6.45	2.51	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.61	0.500	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.61	0.879	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.61	0.701	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.61	0.371	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.61	0.435	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.61	0.871	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.61	0.742	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.61	0.605	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.61	0.427	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.45	0.903	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.45	1.02	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.61	0.613	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-19 Date Collected: 06/10/24 12:45

Client ID: VDT-03 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.45	1.33	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.45	1.33	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.61	0.701	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.61	0.742	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.1	3.79	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.1	1.98	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.22	0.460	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.22	0.427	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.22	0.355	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.22	1.90	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.06	2.66	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.3	9.43	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.3	6.36	1

Project Name: BARNSTABLE **Lab Number:** L2432921

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-19 Date Collected: 06/10/24 12:45

Client ID: VDT-03 Date Received: 06/12/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	44		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	54		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	50		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	61		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	50		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	50		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	49		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	43		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	53		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	42		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	37		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	34		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	23		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	47		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	27		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	33		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	40		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	30		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	28		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	50		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	41		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	37		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	36		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	41		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 07/01/24 12:40
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-16,18-19 Batch: WG1941502-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.40	1.02
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.20	0.856
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.60	0.536
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.40	1.67
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.60	0.472
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.60	0.280
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.60	0.320
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.60	0.384
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.60	0.696
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.40	2.16
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.60	0.432
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.60	0.504
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.60	0.728
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.648
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.40	2.49
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.496
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.872
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.696
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.368
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.432
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.864
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.736
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.600
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.424
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.40	0.896
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.40	1.01

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 07/01/24 12:40
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-16,18-19 Batch: WG1941502-1					
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.608
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.40	1.32
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.40	1.32
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.696
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.736
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.76
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.456
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.424
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.352
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	1.89
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.00	2.64
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.0	9.36
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.0	6.31

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 07/01/24 12:40
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 06/30/24 21:44

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-16,18-19 Batch: WG1941502-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	64		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	76		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	67		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	92		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	70		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	73		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	69		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	61		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	86		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	72		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	67		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	63		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	73		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	109		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	63		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	59		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	85		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	58		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	48		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	69		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	54		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	53		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	67		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	73		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 07/02/24 23:32
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 07/02/24 13:45

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 10,16 Batch: WG1942285-1					
Perfluorobutanoic Acid (PFBA)	2.24	J	ng/l	6.40	1.02
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.20	0.856
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.60	0.536
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.40	1.67
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.60	0.472
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.60	0.280
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.60	0.320
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.60	0.384
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.60	0.696
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.40	2.16
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.60	0.432
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.60	0.504
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.60	0.728
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.648
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.40	2.49
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.496
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.872
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.696
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.368
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.432
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.864
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.736
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.600
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.424
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.40	0.896
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.40	1.01
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.608

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 07/02/24 23:32
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 07/02/24 13:45

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 10,16 Batch: WG1942285-1					
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.40	1.32
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.40	1.32
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.696
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.736
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.76
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.456
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.424
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.352
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	1.89
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.00	2.64
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.0	9.36
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.0	6.31

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 07/02/24 23:32
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 07/02/24 13:45

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 10,16 Batch: WG1942285-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	60		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	67		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	59		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	66		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	60		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	62		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	54		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	58		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	60		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	62		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	59		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	50		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	56		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	49		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	54		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	51		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	50		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	52		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	41		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	65		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	30		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	34		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	54		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	54		10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16,18-19 Batch: WG1941502-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	110		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	116		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	110		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	112		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	126		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	115		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	122		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	116		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	132		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	113		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	131		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	121		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	106		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	120		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	113		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	117		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	75		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	120		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	99		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	110		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	94		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	119		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432921

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16,18-19 Batch: WG1941502-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	119		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	118		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	112		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	125		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	104		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	110		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	99		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	88		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	96		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	103		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	106		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	101		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	110		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	120		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	114		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	107		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	94		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	100		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432921

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16,18-19 Batch: WG1941502-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	61				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	74				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	63				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	73				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	62				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	65				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	62				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	57				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	88				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	65				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	59				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	63				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	68				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	92				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	58				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	56				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	72				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	59				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	46				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	67				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	50				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	50				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	63				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	65				10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16,18-19 Batch: WG1941502-3								
Perfluorobutanoic Acid (PFBA)	108		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	109		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	111		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	105		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	112		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	116		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	109		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	106		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	102		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	115		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	106		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	104		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	107		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	101		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	123		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	97		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	119		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	114		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	97		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	108		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	107		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	110		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432921

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16,18-19 Batch: WG1941502-3								
Perfluorotridecanoic Acid (PFTrDA)	104		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	118		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	106		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	104		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	70		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	114		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	95		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	107		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	109		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	124		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	125		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	117		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	104		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	106		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	128		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	112		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	104		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	92		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432921

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16,18-19 Batch: WG1941502-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	64				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	67				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	62				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	86				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	62				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	64				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	62				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	62				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	70				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	62				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	71				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	65				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	73				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	57				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	58				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	61				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	61				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	54				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	39				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	67				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	51				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	51				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	62				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	62				10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 10,16 Batch: WG1942285-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	138		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	133		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	135		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	136		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	134		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	143		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	126		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	133		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	139		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	132		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	121		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	116		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	146		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	126		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	140		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	124		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	124		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	128		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	114		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	121		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	108		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	124		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432921

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 10,16 Batch: WG1942285-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	128		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	126		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	129		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	128		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	81		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	134		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	113		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	118		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	91		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	128		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	128		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	**151**	Q	-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	113		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	135		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	146		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	131		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	95		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	69		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432921

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 10,16 Batch: WG1942285-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	72				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	77				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	71				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	82				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	68				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	72				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	67				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	71				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	72				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	68				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	71				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	65				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	70				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	60				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	64				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	61				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	60				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	61				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	49				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	75				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	38				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	45				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	66				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	64				10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 10,16 Batch: WG1942285-3								
Perfluorobutanoic Acid (PFBA)	120		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	121		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	122		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	119		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	127		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	131		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	118		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	119		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	116		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	121		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	117		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	107		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	114		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	119		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	123		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	121		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	122		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	126		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	116		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	122		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	121		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	125		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 10,16 Batch: WG1942285-3								
Perfluorotridecanoic Acid (PFTrDA)	124		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	120		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	120		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	118		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	88		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	131		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	117		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	142		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	123		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	128		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	132		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	131		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	104		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	126		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	136		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	112		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	111		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	89		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432921

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 10,16 Batch: WG1942285-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	69				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	76				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	69				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	80				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	66				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	70				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	66				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	67				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	71				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	72				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	67				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	68				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	70				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	60				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	68				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	56				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	61				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	64				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	56				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	73				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	34				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	40				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	63				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	62				10-130

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16,18-19 QC Batch ID: WG1941502-4 WG1941502-5 QC Sample: L2432921-01 Client ID: PFW-2												
Perfluorobutanoic Acid (PFBA)	154	73.4	241	119		235	112		40-150	3		30
Perfluoropentanoic Acid (PFPeA)	476	36.7	530	147		524	132		40-150	1		30
Perfluorobutanesulfonic Acid (PFBS)	31.6	16.3	48.6	105		48.0	102		40-150	1		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	6.32	68.8	78.6	105		73.8	99		40-150	6		30
Perfluorohexanoic Acid (PFHxA)	696E	18.3	729E	**180**	Q	730E	**188**	Q	40-150	0		30
Perfluoropentanesulfonic Acid (PFPeS)	56.8	17.2	82.8	**151**	Q	76.7	117		40-150	8		30
Perfluoroheptanoic Acid (PFHpA)	212	18.3	237	136		235	127		40-150	1		30
Perfluorohexanesulfonic Acid (PFHxS)	620E	16.8	668E	**286**	Q	637E	103		40-150	5		30
Perfluorooctanoic Acid (PFOA)	330	18.3	366	**196**	Q	350	110		40-150	4		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1120	69.7	1250	**187**	Q	1240	**174**	Q	40-150	1		30
Perfluoroheptanesulfonic Acid (PFHpS)	36.9	17.5	76.3	**225**	Q	65.7	**167**	Q	40-150	15		30
Perfluorononanoic Acid (PFNA)	194	18.3	224	**164**	Q	225	**171**	Q	40-150	0		30
Perfluorooctanesulfonic Acid (PFOS)	3550E	17	3390E	**0**	Q	3380E	**0**	Q	40-150	0		30
Perfluorodecanoic Acid (PFDA)	69.0	18.3	91.5	123		84.4	85		40-150	8		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	1710	70.4	1680	**0**	Q	1760E	72		40-150	5		30
Perfluorononanesulfonic Acid (PFNS)	11.7	17.6	44.4	**185**	Q	37.8	150		40-150	16		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	18.3	21.9	119		20.4	113		40-150	7		30
Perfluoroundecanoic Acid (PFUnA)	1200E	18.3	1270E	**382**	Q	1110E	**0**	Q	40-150	13		30
Perfluorodecanesulfonic Acid (PFDS)	7.70	17.7	39.4	**179**	Q	35.1	**157**	Q	40-150	12		30
Perfluorooctanesulfonamide (PFOSA)	68.7	18.3	89.9	116		82.8	78		40-150	8		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	1.44J	18.3	23.6	121		22.8	118		40-150	3		30
Perfluorododecanoic Acid (PFDoA)	10.8	18.3	32.6	119		28.2	96		40-150	14		30

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Client ID: PFW-2	Associated sample(s): 01-16,18-19					QC Batch ID: WG1941502-4			WG1941502-5			QC Sample: L2432921-01
Perfluorotridecanoic Acid (PFTrDA)	6.02	18.3	29.2	126		27.1	116		40-150	7		30
Perfluorotetradecanoic Acid (PFTeDA)	ND	18.3	20.6	112		20.1	111		40-150	2		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	73.4	74.6	102		76.0	105		40-150	2		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	69.3	72.4	104		75.4	110		40-150	4		30
Perfluorododecanesulfonic Acid (PFDoS)	ND	17.8	25.4	143		24.5	139		40-150	4		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	68.6	73.6	107		72.9	108		40-150	1		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	69.3	66.2	96		70.6	103		40-150	6		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	18.3	23.4	128		20.2	112		40-150	15		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	18.3	20.9	114		19.9	110		40-150	5		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	183	223	122		218	120		40-150	2		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	183	231	126		218	120		40-150	6		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	36.7	66.6	**182**	Q	54.2	150		40-150	21		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	36.7	42.8	117		37.6	104		40-150	13		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	32.6	41.7	128		38.2	118		40-150	9		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	36.7	56.1	**153**	Q	53.4	147		40-150	5		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	11.2	91.7	128	127		116	116		40-150	10		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	42.5	458	586	119		556	113		40-150	5		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	458	540	118		510	113		40-150	6		30

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16,18-19 QC Batch ID: WG1941502-4 WG1941502-5 QC Sample: L2432921-01 Client ID: PFW-2

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	78		45		10-213
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	100		56		10-290
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	79		44		10-261
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	92		47		11-97
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	76		44		10-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	100		56		10-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	94		47		11-94
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	71		41		10-172
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	105		55		10-137
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	63		**37**	Q	46-115
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	102		54		14-108
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	61		35		32-114
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	68		**39**	Q	41-125
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	44		29		16-123
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	56		32		28-115
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	63		**38**	Q	40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	73		43		27-156
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	50		31		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	51		32		10-145
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	66		**38**	Q	41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	68		42		29-123
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	64		**38**	Q	39-121
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	61		**36**	Q	38-114

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2432921

Report Date: 08/13/24

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16,18-19 QC Batch ID: WG1941502-4 WG1941502-5 QC Sample: L2432921-01 Client ID: PFW-2												

Surrogate	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	80		44		35-142

PETROLEUM HYDROCARBONS

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-02
Client ID: PFW-5
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/11/24 09:20
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 131,VPH-18-2.1
Analytical Date: 06/18/24 17:47
Analyst: BAD

Trap: EST, Carbopack B/Carboxen 1000&1001
Analytical Column: Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received: Satisfactory
Aqueous Preservative: Laboratory Provided Preserved Container
Sample Temperature upon receipt: Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	100	100.	1
C9-C12 Aliphatics	ND		ug/l	100	100.	1
C9-C10 Aromatics	ND		ug/l	100	100.	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	100	100.	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	100	100.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	118		70-130
2,5-Dibromotoluene-FID	117		70-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID:	L2432921-02			Date Collected:	06/11/24 09:20
Client ID:	PFW-5			Date Received:	06/12/24
Sample Location:	155 S. FLINT ROCK ROAD			Field Prep:	Not Specified
Sample Depth:					
Matrix:	Water			Extraction Method:	EPA 3510C
Analytical Method:	135,EPH-19-2.1			Extraction Date:	06/18/24 23:57
Analytical Date:	06/19/24 15:21	M.S. Analytical Date:	06/20/24 11:50	Cleanup Method1:	EPH-19-2.1
Analyst:	ALL	M.S. Analyst:	JJW	Cleanup Date1:	06/19/24

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/Targets via GCMS-SIM - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	100.	1
C19-C36 Aliphatics	ND		ug/l	100	100.	1
C11-C22 Aromatics	ND		ug/l	100	100.	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	100.	1
Naphthalene	ND		ug/l	0.400	0.136	1
2-Methylnaphthalene	ND		ug/l	0.400	0.077	1
Acenaphthylene	ND		ug/l	0.400	0.054	1
Acenaphthene	ND		ug/l	0.400	0.091	1
Fluorene	ND		ug/l	0.400	0.097	1
Phenanthrene	ND		ug/l	0.400	0.084	1
Anthracene	ND		ug/l	0.400	0.079	1
Fluoranthene	ND		ug/l	0.400	0.121	1
Pyrene	ND		ug/l	0.400	0.114	1
Benzo(a)anthracene	ND		ug/l	0.400	0.088	1
Chrysene	ND		ug/l	0.400	0.102	1
Benzo(b)fluoranthene	ND		ug/l	0.400	0.102	1
Benzo(k)fluoranthene	ND		ug/l	0.400	0.126	1
Benzo(a)pyrene	ND		ug/l	0.200	0.072	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	0.095	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	0.091	1
Benzo(ghi)perylene	ND		ug/l	0.400	0.102	1

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-02
Client ID: PFW-5
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/11/24 09:20
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/Targets via GCMS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	72		40-140
o-Terphenyl	64		40-140
2-Fluorobiphenyl	62		40-140
2-Bromonaphthalene	63		40-140
O-Terphenyl-MS	47		40-140

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-12
Client ID: OW-2S
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/10/24 17:55
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 131,VPH-18-2.1
Analytical Date: 06/18/24 18:17
Analyst: BAD

Trap: EST, Carbopack B/Carboxen 1000&1001
Analytical Column: Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received: Satisfactory
Aqueous Preservative: Laboratory Provided Preserved Container
Sample Temperature upon receipt: Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	100	100.	1
C9-C12 Aliphatics	ND		ug/l	100	100.	1
C9-C10 Aromatics	ND		ug/l	100	100.	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	100	100.	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	100	100.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	111		70-130
2,5-Dibromotoluene-FID	110		70-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID:	L2432921-12			Date Collected:	06/10/24 17:55
Client ID:	OW-2S			Date Received:	06/12/24
Sample Location:	155 S. FLINT ROCK ROAD			Field Prep:	Not Specified
Sample Depth:					
Matrix:	Water			Extraction Method:	EPA 3510C
Analytical Method:	135,EPH-19-2.1			Extraction Date:	06/18/24 23:57
Analytical Date:	06/19/24 15:46	M.S. Analytical Date:	06/20/24 12:07	Cleanup Method1:	EPH-19-2.1
Analyst:	ALL	M.S. Analyst:	JJW	Cleanup Date1:	06/19/24

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/Targets via GCMS-SIM - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	100.	1
C19-C36 Aliphatics	ND		ug/l	100	100.	1
C11-C22 Aromatics	ND		ug/l	100	100.	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	100.	1
Naphthalene	ND		ug/l	0.400	0.136	1
2-Methylnaphthalene	ND		ug/l	0.400	0.077	1
Acenaphthylene	ND		ug/l	0.400	0.054	1
Acenaphthene	ND		ug/l	0.400	0.091	1
Fluorene	ND		ug/l	0.400	0.097	1
Phenanthrene	ND		ug/l	0.400	0.084	1
Anthracene	ND		ug/l	0.400	0.079	1
Fluoranthene	ND		ug/l	0.400	0.121	1
Pyrene	ND		ug/l	0.400	0.114	1
Benzo(a)anthracene	ND		ug/l	0.400	0.088	1
Chrysene	ND		ug/l	0.400	0.102	1
Benzo(b)fluoranthene	ND		ug/l	0.400	0.102	1
Benzo(k)fluoranthene	ND		ug/l	0.400	0.126	1
Benzo(a)pyrene	ND		ug/l	0.200	0.072	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	0.095	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	0.091	1
Benzo(ghi)perylene	ND		ug/l	0.400	0.102	1

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-12
Client ID: OW-2S
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/10/24 17:55
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/Targets via GCMS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	67		40-140
o-Terphenyl	61		40-140
2-Fluorobiphenyl	61		40-140
2-Bromonaphthalene	63		40-140
O-Terphenyl-MS	44		40-140

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-13
Client ID: OW-8A
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/10/24 14:45
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 131,VPH-18-2.1
Analytical Date: 06/18/24 18:48
Analyst: BAD

Trap: EST, Carbopack B/Carboxen 1000&1001
Analytical Column: Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received: Satisfactory
Aqueous Preservative: Laboratory Provided Preserved Container
Sample Temperature upon receipt: Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	100	100.	1
C9-C12 Aliphatics	ND		ug/l	100	100.	1
C9-C10 Aromatics	ND		ug/l	100	100.	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	100	100.	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	100	100.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	114		70-130
2,5-Dibromotoluene-FID	112		70-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID:	L2432921-13			Date Collected:	06/10/24 14:45
Client ID:	OW-8A			Date Received:	06/12/24
Sample Location:	155 S. FLINT ROCK ROAD			Field Prep:	Not Specified
Sample Depth:					
Matrix:	Water			Extraction Method:	EPA 3510C
Analytical Method:	135,EPH-19-2.1			Extraction Date:	06/18/24 23:57
Analytical Date:	06/19/24 14:06	M.S. Analytical Date:	06/20/24 12:23	Cleanup Method1:	EPH-19-2.1
Analyst:	ALL	M.S. Analyst:	JJW	Cleanup Date1:	06/19/24

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/Targets via GCMS-SIM - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	100.	1
C19-C36 Aliphatics	ND		ug/l	100	100.	1
C11-C22 Aromatics	ND		ug/l	100	100.	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	100.	1
Naphthalene	ND		ug/l	0.400	0.136	1
2-Methylnaphthalene	0.448		ug/l	0.400	0.077	1
Acenaphthylene	ND		ug/l	0.400	0.054	1
Acenaphthene	ND		ug/l	0.400	0.091	1
Fluorene	ND		ug/l	0.400	0.097	1
Phenanthrene	ND		ug/l	0.400	0.084	1
Anthracene	ND		ug/l	0.400	0.079	1
Fluoranthene	ND		ug/l	0.400	0.121	1
Pyrene	ND		ug/l	0.400	0.114	1
Benzo(a)anthracene	ND		ug/l	0.400	0.088	1
Chrysene	ND		ug/l	0.400	0.102	1
Benzo(b)fluoranthene	ND		ug/l	0.400	0.102	1
Benzo(k)fluoranthene	ND		ug/l	0.400	0.126	1
Benzo(a)pyrene	ND		ug/l	0.200	0.072	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	0.095	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	0.091	1
Benzo(ghi)perylene	ND		ug/l	0.400	0.102	1

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-13
Client ID: OW-8A
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/10/24 14:45
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/Targets via GCMS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	64		40-140
o-Terphenyl	63		40-140
2-Fluorobiphenyl	66		40-140
2-Bromonaphthalene	68		40-140
O-Terphenyl-MS	47		40-140

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-16
Client ID: PFW-1
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/10/24 16:25
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 131,VPH-18-2.1
Analytical Date: 06/18/24 19:18
Analyst: BAD

Trap: EST, Carbopack B/Carboxen 1000&1001
Analytical Column: Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received: Satisfactory
Aqueous Preservative: Laboratory Provided Preserved Container
Sample Temperature upon receipt: Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	100	100.	1
C9-C12 Aliphatics	ND		ug/l	100	100.	1
C9-C10 Aromatics	ND		ug/l	100	100.	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	100	100.	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	100	100.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	107		70-130
2,5-Dibromotoluene-FID	106		70-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID:	L2432921-16			Date Collected:	06/10/24 16:25
Client ID:	PFW-1			Date Received:	06/12/24
Sample Location:	155 S. FLINT ROCK ROAD			Field Prep:	Not Specified
Sample Depth:					
Matrix:	Water			Extraction Method:	EPA 3510C
Analytical Method:	135,EPH-19-2.1			Extraction Date:	06/18/24 23:57
Analytical Date:	06/19/24 14:31	M.S. Analytical Date:	06/20/24 12:40	Cleanup Method1:	EPH-19-2.1
Analyst:	ALL	M.S. Analyst:	JJW	Cleanup Date1:	06/19/24

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/Targets via GCMS-SIM - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	100.	1
C19-C36 Aliphatics	ND		ug/l	100	100.	1
C11-C22 Aromatics	ND		ug/l	100	100.	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	100.	1
Naphthalene	ND		ug/l	0.400	0.136	1
2-Methylnaphthalene	ND		ug/l	0.400	0.077	1
Acenaphthylene	ND		ug/l	0.400	0.054	1
Acenaphthene	ND		ug/l	0.400	0.091	1
Fluorene	ND		ug/l	0.400	0.097	1
Phenanthrene	ND		ug/l	0.400	0.084	1
Anthracene	ND		ug/l	0.400	0.079	1
Fluoranthene	ND		ug/l	0.400	0.121	1
Pyrene	ND		ug/l	0.400	0.114	1
Benzo(a)anthracene	ND		ug/l	0.400	0.088	1
Chrysene	ND		ug/l	0.400	0.102	1
Benzo(b)fluoranthene	ND		ug/l	0.400	0.102	1
Benzo(k)fluoranthene	ND		ug/l	0.400	0.126	1
Benzo(a)pyrene	ND		ug/l	0.200	0.072	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	0.095	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	0.091	1
Benzo(ghi)perylene	ND		ug/l	0.400	0.102	1

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-16
Client ID: PFW-1
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/10/24 16:25
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/Targets via GCMS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	70		40-140
o-Terphenyl	60		40-140
2-Fluorobiphenyl	62		40-140
2-Bromonaphthalene	63		40-140
O-Terphenyl-MS	45		40-140

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-17
Client ID: SBV-3
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/10/24 16:20
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 131,VPH-18-2.1
Analytical Date: 06/18/24 19:49
Analyst: BAD

Trap: EST, Carbopack B/Carboxen 1000&1001
Analytical Column: Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received: Satisfactory
Aqueous Preservative: Laboratory Provided Preserved Container
Sample Temperature upon receipt: Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	100	100.	1
C9-C12 Aliphatics	104		ug/l	100	100.	1
C9-C10 Aromatics	ND		ug/l	100	100.	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	100	100.	1
C9-C12 Aliphatics, Adjusted	104		ug/l	100	100.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	114		70-130
2,5-Dibromotoluene-FID	112		70-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID:	L2432921-17			Date Collected:	06/10/24 16:20
Client ID:	SBV-3			Date Received:	06/12/24
Sample Location:	155 S. FLINT ROCK ROAD			Field Prep:	Not Specified
Sample Depth:					
Matrix:	Water			Extraction Method:	EPA 3510C
Analytical Method:	135,EPH-19-2.1			Extraction Date:	06/18/24 23:57
Analytical Date:	06/19/24 14:56	M.S. Analytical Date:	06/20/24 12:57	Cleanup Method1:	EPH-19-2.1
Analyst:	ALL	M.S. Analyst:	JJW	Cleanup Date1:	06/19/24

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/Targets via GCMS-SIM - Westborough Lab						
C9-C18 Aliphatics	214		ug/l	100	100.	1
C19-C36 Aliphatics	178		ug/l	100	100.	1
C11-C22 Aromatics	193		ug/l	100	100.	1
C11-C22 Aromatics, Adjusted	180		ug/l	100	100.	1
Naphthalene	0.816		ug/l	0.400	0.136	1
2-Methylnaphthalene	9.95		ug/l	0.400	0.077	1
Acenaphthylene	0.088	J	ug/l	0.400	0.054	1
Acenaphthene	0.536		ug/l	0.400	0.091	1
Fluorene	0.674		ug/l	0.400	0.097	1
Phenanthrene	0.440		ug/l	0.400	0.084	1
Anthracene	ND		ug/l	0.400	0.079	1
Fluoranthene	ND		ug/l	0.400	0.121	1
Pyrene	ND		ug/l	0.400	0.114	1
Benzo(a)anthracene	ND		ug/l	0.400	0.088	1
Chrysene	ND		ug/l	0.400	0.102	1
Benzo(b)fluoranthene	ND		ug/l	0.400	0.102	1
Benzo(k)fluoranthene	ND		ug/l	0.400	0.126	1
Benzo(a)pyrene	ND		ug/l	0.200	0.072	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	0.095	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	0.091	1
Benzo(ghi)perylene	ND		ug/l	0.400	0.102	1

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2432921-17
Client ID: SBV-3
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/10/24 16:20
Date Received: 06/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/Targets via GCMS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	62		40-140
o-Terphenyl	64		40-140
2-Fluorobiphenyl	65		40-140
2-Bromonaphthalene	67		40-140
O-Terphenyl-MS	47		40-140

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 135,EPH-19-2.1
Analytical Date: 06/19/24 00:57
Analyst: CRE

M.S. Analytical Date: 06/19/24 11:33
M.S. Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 06/18/24 15:49
Cleanup Method: EPH-19-2.1
Cleanup Date: 06/18/24

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/Targets via GCMS-SIM - Westborough Lab for sample(s): 02,12-13,16-17 Batch: WG1936004-1					
C9-C18 Aliphatics	ND		ug/l	100	100.
C19-C36 Aliphatics	ND		ug/l	100	100.
C11-C22 Aromatics	ND		ug/l	100	100.
C11-C22 Aromatics, Adjusted	ND		ug/l	100	100.
Naphthalene	ND		ug/l	0.400	0.136
2-Methylnaphthalene	ND		ug/l	0.400	0.077
Acenaphthylene	ND		ug/l	0.400	0.054
Acenaphthene	ND		ug/l	0.400	0.091
Fluorene	ND		ug/l	0.400	0.097
Phenanthrene	ND		ug/l	0.400	0.084
Anthracene	ND		ug/l	0.400	0.079
Fluoranthene	ND		ug/l	0.400	0.121
Pyrene	ND		ug/l	0.400	0.114
Benzo(a)anthracene	ND		ug/l	0.400	0.088
Chrysene	ND		ug/l	0.400	0.102
Benzo(b)fluoranthene	ND		ug/l	0.400	0.102
Benzo(k)fluoranthene	ND		ug/l	0.400	0.126
Benzo(a)pyrene	ND		ug/l	0.200	0.072
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	0.095
Dibenzo(a,h)anthracene	ND		ug/l	0.400	0.091
Benzo(ghi)perylene	ND		ug/l	0.400	0.102

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 135,EPH-19-2.1
Analytical Date: 06/19/24 00:57
Analyst: CRE

M.S. Analytical Date: 06/19/24 11:33
M.S. Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 06/18/24 15:49
Cleanup Method: EPH-19-2.1
Cleanup Date: 06/18/24

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/Targets via GCMS-SIM - Westborough Lab for sample(s): 02,12-13,16-17 Batch: WG1936004-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	70		40-140
o-Terphenyl	72		40-140
2-Fluorobiphenyl	78		40-140
2-Bromonaphthalene	80		40-140
O-Terphenyl-MS	47		40-140

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2432921
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 131,VPH-18-2.1
Analytical Date: 06/18/24 11:30
Analyst: BAD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 02,12-13,16-17 Batch: WG1936391-4					
C5-C8 Aliphatics	ND		ug/l	100	100.
C9-C12 Aliphatics	ND		ug/l	100	100.
C9-C10 Aromatics	ND		ug/l	100	100.
C5-C8 Aliphatics, Adjusted	ND		ug/l	100	100.
C9-C12 Aliphatics, Adjusted	ND		ug/l	100	100.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	110		70-130
2,5-Dibromotoluene-FID	108		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/Targets via GCMS-SIM - Westborough Lab	Associated sample(s):	02,12-13,16-17	Batch:	WG1936004-2	WG1936004-3			
C9-C18 Aliphatics	51		54		40-140	6		20
C19-C36 Aliphatics	74		76		40-140	3		20
C11-C22 Aromatics	79		87		40-140	10		20
Naphthalene	64		69		40-140	8		20
2-Methylnaphthalene	76		81		40-140	6		20
Acenaphthylene	77		81		40-140	5		20
Acenaphthene	64		70		40-140	9		20
Fluorene	79		84		40-140	6		20
Phenanthrene	68		74		40-140	8		20
Anthracene	81		86		40-140	6		20
Fluoranthene	72		76		40-140	5		20
Pyrene	68		72		40-140	6		20
Benzo(a)anthracene	100		106		40-140	6		20
Chrysene	81		87		40-140	7		20
Benzo(b)fluoranthene	90		97		40-140	7		20
Benzo(k)fluoranthene	82		88		40-140	7		20
Benzo(a)pyrene	101		109		40-140	8		20
Indeno(1,2,3-cd)Pyrene	126		134		40-140	6		20
Dibenzo(a,h)anthracene	96		105		40-140	9		20
Benzo(ghi)perylene	81		86		40-140	6		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/Targets via GCMS-SIM - Westborough Lab Associated sample(s): 02,12-13,16-17 Batch: WG1936004-2 WG1936004-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	67		72		40-140
o-Terphenyl	82		90		40-140
2-Fluorobiphenyl	82		93		40-140
2-Bromonaphthalene	82		96		40-140
O-Terphenyl-MS	72		76		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 02,12-13,16-17 Batch: WG1936391-2 WG1936391-3								
C5-C8 Aliphatics	97		98		70-130	1		25
C9-C12 Aliphatics	109		109		70-130	0		25
C9-C10 Aromatics	111		110		70-130	1		25
Benzene	104		106		70-130	2		25
Toluene	104		105		70-130	1		25
Ethylbenzene	110		110		70-130	0		25
p/m-Xylene	110		110		70-130	0		25
o-Xylene	112		111		70-130	1		25
Methyl tert butyl ether	111		112		70-130	1		25
Naphthalene	124		124		70-130	0		25
1,2,4-Trimethylbenzene	111		110		70-130	1		25
Pentane	100		101		70-130	1		25
2-Methylpentane	98		100		70-130	1		25
2,2,4-Trimethylpentane	97		98		70-130	2		25
n-Nonane	106		108		30-130	2		25
n-Decane	114		115		70-130	1		25
n-Butylcyclohexane	106		106		70-130	0		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	**137**	Q	**134**	Q	70-130
2,5-Dibromotoluene-FID	**133**	Q	130		70-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent
D	Absent
E	Absent
F	Absent
G	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2432921-01A	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-01B	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-01C	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-02A	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-02B	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-02C	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-02D	Amber 1000ml HCl preserved	E	<2	<2	5.9	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2432921-02E	Amber 1000ml HCl preserved	E	<2	<2	5.9	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2432921-02F	Vial HCl preserved	E	NA		5.9	Y	Absent		VPH-18(14)
L2432921-02G	Vial HCl preserved	E	NA		5.9	Y	Absent		VPH-18(14)
L2432921-02H	Vial HCl preserved	E	NA		5.9	Y	Absent		VPH-18(14)
L2432921-02I	Vial HCl preserved	E	NA		5.9	Y	Absent		MCP-8260-21(14)
L2432921-02J	Vial HCl preserved	E	NA		5.9	Y	Absent		MCP-8260-21(14)
L2432921-02K	Vial HCl preserved	E	NA		5.9	Y	Absent		MCP-8260-21(14)
L2432921-03A	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-03B	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2432921-03C	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-04A	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-04B	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-04C	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-05A	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-05B	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-05C	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-06A	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-06B	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-06C	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-07A	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-07B	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-07C	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-08A	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-08B	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-08C	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-09A	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-09B	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-09C	Plastic 500ml unpreserved	G	NA		3.3	Y	Absent		A2-1633-DRAFT(28)
L2432921-10A	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432921-10B	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432921-10C	Plastic 500ml unpreserved	F	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2432921-11A	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432921-11B	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432921-11C	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432921-12A	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432921-12B	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432921-12C	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2432921-12D	Amber 1000ml HCl preserved	C	<2	<2	3.5	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2432921-12E	Amber 1000ml HCl preserved	C	<2	<2	3.5	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2432921-12F	Vial HCl preserved	C	NA		3.5	Y	Absent		VPH-18(14)
L2432921-12G	Vial HCl preserved	C	NA		3.5	Y	Absent		VPH-18(14)
L2432921-12H	Vial HCl preserved	C	NA		3.5	Y	Absent		VPH-18(14)
L2432921-12I	Vial HCl preserved	C	NA		3.5	Y	Absent		MCP-8260-21(14)
L2432921-12J	Vial HCl preserved	C	NA		3.5	Y	Absent		MCP-8260-21(14)
L2432921-12K	Vial HCl preserved	C	NA		3.5	Y	Absent		MCP-8260-21(14)
L2432921-13A	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432921-13B	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432921-13C	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432921-13D	Amber 1000ml HCl preserved	C	<2	<2	3.5	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2432921-13E	Amber 1000ml HCl preserved	C	<2	<2	3.5	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2432921-13F	Vial HCl preserved	C	NA		3.5	Y	Absent		VPH-18(14)
L2432921-13G	Vial HCl preserved	C	NA		3.5	Y	Absent		VPH-18(14)
L2432921-13H	Vial HCl preserved	C	NA		3.5	Y	Absent		VPH-18(14)
L2432921-13I	Vial HCl preserved	C	NA		3.5	Y	Absent		MCP-8260-21(14)
L2432921-13J	Vial HCl preserved	C	NA		3.5	Y	Absent		MCP-8260-21(14)
L2432921-13K	Vial HCl preserved	C	NA		3.5	Y	Absent		MCP-8260-21(14)
L2432921-14A	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432921-14B	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432921-14C	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432921-15A	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432921-15B	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432921-15C	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432921-16A	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432921-16B	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)
L2432921-16C	Plastic 500ml unpreserved	D	NA		2.8	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2432921-16D	Amber 1000ml HCl preserved	C	<2	<2	3.5	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2432921-16E	Amber 1000ml HCl preserved	C	<2	<2	3.5	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2432921-16F	Vial HCl preserved	C	NA		3.5	Y	Absent		VPH-18(14)
L2432921-16G	Vial HCl preserved	C	NA		3.5	Y	Absent		VPH-18(14)
L2432921-16H	Vial HCl preserved	C	NA		3.5	Y	Absent		VPH-18(14)
L2432921-16I	Vial HCl preserved	C	NA		3.5	Y	Absent		MCP-8260-21(14)
L2432921-16J	Vial HCl preserved	C	NA		3.5	Y	Absent		MCP-8260-21(14)
L2432921-16K	Vial HCl preserved	C	NA		3.5	Y	Absent		MCP-8260-21(14)
L2432921-17D	Amber 1000ml HCl preserved	C	<2	<2	3.5	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2432921-17E	Amber 1000ml HCl preserved	C	<2	<2	3.5	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2432921-17F	Vial HCl preserved	C	NA		3.5	Y	Absent		VPH-18(14)
L2432921-17G	Vial HCl preserved	C	NA		3.5	Y	Absent		VPH-18(14)
L2432921-17H	Vial HCl preserved	C	NA		3.5	Y	Absent		VPH-18(14)
L2432921-17I	Vial HCl preserved	C	NA		3.5	Y	Absent		MCP-8260-21(14)
L2432921-17J	Vial HCl preserved	C	NA		3.5	Y	Absent		MCP-8260-21(14)
L2432921-17K	Vial HCl preserved	C	NA		3.5	Y	Absent		MCP-8260-21(14)
L2432921-18A	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432921-18B	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432921-18C	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432921-19A	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432921-19B	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)
L2432921-19C	Plastic 500ml unpreserved	A	NA		2.9	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

PFAS PARAMETER SUMMARY

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

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2432921
Report Date: 08/13/24

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:	BARNSTABLE	**Lab Number:**	L2432921
Project Number:	01.0177641.00	**Report Date:**	08/13/24

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

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

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

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

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

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

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

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

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

Report Format: DU Report with 'J' Qualifiers

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Footnotes

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

Terms

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

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

Report Format: DU Report with 'J' Qualifiers

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Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

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

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

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration 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:	BARNSTABLE	**Lab Number:**	L2432921
Project Number:	01.0177641.00	**Report Date:**	08/13/24

REFERENCES

131 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, February 2018, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, June 1, 2018.

135 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, December 2019, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, March 1, 2020.

141 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA and IIB, November 2021.

144 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. Draft EPA Method 1633, EPA Document 821-D-22-001, June 2022.

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

Mansfield Facility
SM 2540D: TSS.
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.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

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

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

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Date Rec'd in Lab: 6/14/24

ALPHA Job #: L2432921

8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: GZA GeoEnvironmental, Inc.
Address: 249 Vanderbilt Avenue
Norwood, MA 02062
Phone: 781-589-3866
Email: Jennifer.McKechnie@gza.com; Prosuna.Thompson@gza.com; Flora.Su@gza.com

Additional Project Information:

Project Information

Project Name: Barnstable
Project Location: 155 S. Flint Rock Rd
Project #: 01.0177641.00
Project Manager: Jennifer McKechnie
ALPHA Quote #: 27478

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☒ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☒ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☒ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☒ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	PFAS: EPA 1633	Sample Comments	TOTAL # BOTTLES
32924 -01	PFW-2	6/11/24	09:10	GW	OLB									X		3
-02	PFW-5	6/11/24	09:20	GW	KC	X				X	X			X		11
-03	MW-305	6/11/24	11:15	GW	KC									X		3
-04	PC-34S	6/11/24	10:25	GW	OLB									X		3
-05	PC-34D	6/11/24	11:10	GW	OLB									X		3
-06	PC-35S	6/11/24	11:11	GW	FKS									X		3
-07	PC-35D	6/11/24	12:18	GW	FKS	~~X~~								X		3
-08	PC-36S	6/11/24	12:50	GW	OLB	~~X~~								X		3
-09	PC-36D	6/11/24	13:40	GW	OLB	~~X~~								X		3
-10	MW-311	6/11/24	14:25	GW	KC	~~X~~								X		3
	Container Type					V				A	V			P		
	Preservative					B				B	B			A		

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
DAV'S	06/12/24 1130	DAV'S	6-12-24 1130
Riley Chrisman	6/12/24 15:15		6/12/24 1525
MCP2	6/14/24 15:00		6/14/24 (GW)
	6/14/24 1720		

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 6/14/24

ALPHA Job #: L2432921

ALPHA
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: GZA GeoEnvironmental, Inc.
Address: 249 Vanderbilt Avenue
Norwood, MA 02062
Phone: 781-589-3866
Email: Jennifer.McKechnie@gza.com; Rowan.Thompson@gza.com; Flora.Su@gza.com

Additional Project Information:

Project Information

Project Name: Barnstable
Project Location: 155 S. Flint Rock Rd
Project #: 01.0177641.00
Project Manager: Jennifer McKechnie
ALPHA Quote #: 27478

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☒ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program ____ Criteria ____

ANALYSIS

VOC: ☒ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☒ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☒ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
PFAS: 1633

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB	TPH	PFAS	Sample Comments	TOTAL # BOTTLES
-11	OW-2D	06/10/24	16:30	GW	FKS									X		3
-12	OW-2S	06/10/24	17:55	GW	FKS	X				X	X			X		11
-13	OW-8A	06/10/24	14:45	GW	KC	X				X	X			X		11
-14	OW-8D	06/10/24	13:10	GW	KC									X		3
-16	PC-37	06/10/24	14:10	GW	NCL									X		3
-16	PFW-1	06/10/24	16:25	GW	KC	X				X	X			X		11
-17	SBV-3	06/10/24	16:20	GW	OLB	X				X	X					8
-18	VDT-01	06/10/24	16:15	GW	VER									X		3
-19	VDT-03	06/10/24	12:45	GW	VER									X		3
	Container Type					V				A	V			P		
	Preservative					B				B	B			A		

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H= $Na_2S_2O_3$
I= Ascorbic Acid
J= NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Flora Su	06/12/24 11:25		
DAOS	6/12-24 15:24	DAOS	6-12-24 11:25
Ryley Fabian	15:00 6/14/24		6/12/24 1825
MKM	6/14/24 1720	MKM	6/14/24 1720

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

Method Blank Summary
Form 4
Volatiles

Client	: GZA GeoEnvironmental, Inc.	**Lab Number**	: L2432921
Project Name	: BARNSTABLE	**Project Number**	: 01.0177641.00
Lab Sample ID	: WG1936533-5	**Lab File ID**	: V16240619A07
Instrument ID	: VOA116		
Matrix	: WATER	**Analysis Date**	: 06/19/24 06:16

Client Sample No.	Lab Sample ID	Analysis Date
WG1936533-3LCS	WG1936533-3	06/19/24 04:42
WG1936533-4LCSD	WG1936533-4	06/19/24 05:06
PFW-5	L2432921-02	06/19/24 09:26
OW-2S	L2432921-12	06/19/24 09:49
OW-8A	L2432921-13	06/19/24 10:13
PFW-1	L2432921-16	06/19/24 10:37
SBV-3	L2432921-17	06/19/24 11:01

Calibration Verification Summary
Form 7
Volatiles

Client	: GZA GeoEnvironmental, Inc.		**Lab Number**	: L2432921	
Project Name	: BARNSTABLE		**Project Number**	: 01.0177641.00	
Instrument ID	: VOA116		**Calibration Date**	: 06/19/24 04:42	
Lab File ID	: V16240619A03		**Init. Calib. Date(s)**	: 05/31/24	06/01/24
Sample No	: WG1936533-2		**Init. Calib. Times**	: 23:29	03:27
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	79	0
Dichlorodifluoromethane	0.197	0.165	-	16.2	20	60	0
Chloromethane	0.141	0.144	-	-2.1	20	78	0
Vinyl chloride	0.246	0.243	-	1.2	20	71	0
Bromomethane	0.141	0.127	-	9.9	20	77	0
Chloroethane	0.18	0.17	-	5.6	20	69	0
Trichlorofluoromethane	0.265	0.271	-	-2.3	20	75	0
Ethyl ether	0.06	0.063	-	-5	20	83	0
1,1-Dichloroethene	0.134	0.135	-	-0.7	20	76	0
Carbon disulfide	0.44	0.45	-	-2.3	20	78	0
Freon-113	0.154	0.156	-	-1.3	20	75	0
Acrolein	0.015	0.013	-	13.3	20	74	0
Methylene chloride	0.175	0.164	-	6.3	20	79	0
Acetone	0.024	0.028	-	-16.7	20	91	0
trans-1,2-Dichloroethene	0.148	0.148	-	0	20	77	0
Methyl acetate	0.057	0.065	-	-14	20	97	0
Methyl tert-butyl ether	0.27	0.271	-	-0.4	20	84	0
tert-Butyl alcohol	0.00456	0.00509*	-	-11.6	20	86	0
Diisopropyl ether	0.382	0.429	-	-12.3	20	90	0
1,1-Dichloroethane	0.264	0.294*	-	-11.4	20	84	0
Halothane	0.122	0.122	-	0	20	75	0
Acrylonitrile	0.029	0.031	-	-6.9	20	82	0
Ethyl tert-butyl ether	0.333	0.351	-	-5.4	20	95	0
Vinyl acetate	0.227	0.251	-	-10.6	20	104	0
cis-1,2-Dichloroethene	0.162	0.164*	-	-1.2	20	75	0
2,2-Dichloropropane	0.173	0.194	-	-12.1	20	92	0
Bromochloromethane	0.086	0.09*	-	-4.7	20	78	0
Cyclohexane	0.235	0.274	-	-16.6	20	88	0
Chloroform	0.287	0.32	-	-11.5	20	87	0
Ethyl acetate	0.082	0.092	-	-12.2	20	99	0
Carbon tetrachloride	0.249	0.245	-	1.6	20	76	0
Tetrahydrofuran	0.027	0.032	-	-18.5	20	93	0
Dibromofluoromethane	0.265	0.26	-	1.9	20	79	0
1,1,1-Trichloroethane	0.252	0.258	-	-2.4	20	78	0
2-Butanone	0.036	0.044	-	-22.2*	20	108	0
1,1-Dichloropropene	0.196	0.21	-	-7.1	20	79	0
Benzene	0.589	0.632	-	-7.3	20	79	0
tert-Amyl methyl ether	0.271	0.263	-	3	20	86	0
1,2-Dichloroethane-d4	0.267	0.277	-	-3.7	20	83	0
1,2-Dichloroethane	0.201	0.221	-	-10	20	87	0
Methyl cyclohexane	0.278	0.293	-	-5.4	20	82	0
Trichloroethene	0.173	0.182*	-	-5.2	20	78	0
Dibromomethane	0.099	0.096	-	3	20	76	0

*** Value outside of QC limits.**

Calibration Verification Summary
Form 7
Volatiles

Client	: GZA GeoEnvironmental, Inc.		**Lab Number**	: L2432921	
Project Name	: BARNSTABLE		**Project Number**	: 01.0177641.00	
Instrument ID	: VOA116		**Calibration Date**	: 06/19/24 04:42	
Lab File ID	: V16240619A03		**Init. Calib. Date(s)**	: 05/31/24	06/01/24
Sample No	: WG1936533-2		**Init. Calib. Times**	: 23:29	03:27
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichloropropane	0.151	0.172	-	-13.9	20	92	0
2-Chloroethyl vinyl ether	0.064	0.054	-	15.6	20	76	0
Bromodichloromethane	0.245	0.25*	-	-2	20	78	0
1,4-Dioxane	0.00072	0.00061*	-	15.3	20	71	0
cis-1,3-Dichloropropene	10	10.061	-	-0.6	20	81	0
Chlorobenzene-d5	1	1	-	0	20	82	0
Toluene-d8	1.053	1.075	-	-2.1	20	82	0
Toluene	0.47	0.474	-	-0.9	20	78	0
4-Methyl-2-pentanone	10	9.261	-	7.4	20	86	0
Tetrachloroethene	0.249	0.233	-	6.4	20	73	0
trans-1,3-Dichloropropene	0.217	0.223*	-	-2.8	20	84	0
Ethyl methacrylate	10	8.711	-	12.9	20	86	0
1,1,2-Trichloroethane	0.128	0.13*	-	-1.6	20	80	0
Chlorodibromomethane	0.218	0.201	-	7.8	20	73	0
1,3-Dichloropropane	0.248	0.253	-	-2	20	80	0
1,2-Dibromoethane	0.146	0.145*	-	0.7	20	77	0
2-Hexanone	10	9.327	-	6.7	20	92	0
Chlorobenzene	0.549	0.544	-	0.9	20	78	0
Ethylbenzene	0.912	0.916	-	-0.4	20	79	0
1,1,1,2-Tetrachloroethane	0.21	0.198	-	5.7	20	76	0
p/m Xylene	0.365	0.362	-	0.8	20	76	0
o Xylene	20	17.814	-	10.9	20	77	0
Styrene	20	17.866	-	10.7	20	78	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	85	0
Bromoform	0.272	0.221	-	18.8	20	72	0
Isopropylbenzene	10	8.606	-	13.9	20	76	0
4-Bromofluorobenzene	0.701	0.706	-	-0.7	20	87	0
Bromobenzene	0.484	0.426	-	12	20	72	0
n-Propylbenzene	2.119	2.071	-	2.3	20	79	0
1,4-Dichlorobutane	0.388	0.416	-	-7.2	20	92	0
1,1,2,2-Tetrachloroethane	0.334	0.324	-	3	20	81	0
4-Ethyltoluene	1.814	1.649	-	9.1	20	77	0
2-Chlorotoluene	1.426	1.422	-	0.3	20	80	0
1,3,5-Trimethylbenzene	1.513	1.471	-	2.8	20	78	0
1,2,3-Trichloropropane	0.258	0.26	-	-0.8	20	83	0
trans-1,4-Dichloro-2-buten	0.077	0.086	-	-11.7	20	94	0
4-Chlorotoluene	1.249	1.235	-	1.1	20	80	0
tert-Butylbenzene	1.421	1.258	-	11.5	20	76	0
1,2,4-Trimethylbenzene	1.544	1.393	-	9.8	20	77	0
sec-Butylbenzene	10	9.144	-	8.6	20	78	0
p-Isopropyltoluene	10	8.99	-	10.1	20	78	0
1,3-Dichlorobenzene	0.758	0.784	-	-3.4	20	78	0
1,4-Dichlorobenzene	0.989	0.899	-	9.1	20	74	0

*** Value outside of QC limits.**

Calibration Verification Summary
Form 7
Volatiles

Client	: GZA GeoEnvironmental, Inc.		**Lab Number**	: L2432921	
Project Name	: BARNSTABLE		**Project Number**	: 01.0177641.00	
Instrument ID	: VOA116		**Calibration Date**	: 06/19/24 04:42	
Lab File ID	: V16240619A03		**Init. Calib. Date(s)**	: 05/31/24	06/01/24
Sample No	: WG1936533-2		**Init. Calib. Times**	: 23:29	03:27
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
p-Diethylbenzene	1.059	0.91	-	14.1	20	76	0
n-Butylbenzene	10	9.077	-	9.2	20	80	0
1,2-Dichlorobenzene	0.883	0.812	-	8	20	74	0
1,2,4,5-Tetramethylbenzene	10	8.1	-	19	20	71	0
1,2-Dibromo-3-chloropropan	10	8.59	-	14.1	20	79	0
1,3,5-Trichlorobenzene	0.694	0.614	-	11.5	20	72	0
Hexachlorobutadiene	0.297	0.253	-	14.8	20	70	0
1,2,4-Trichlorobenzene	10	8.462	-	15.4	20	69	0
Naphthalene	10	7.567	-	24.3*	20	68	0
1,2,3-Trichlorobenzene	0.501	0.434	-	13.4	20	70	0

*** Value outside of QC limits.**

ANALYTICAL REPORT

Lab Number:	L2433692
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Jennifer McKechnie
Phone:	(781) 278-3864
Project Name:	BARNSTABLE
Project Number:	01.0177641.00
Report Date:	08/13/24

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0825), DoD (L2474), FL (E87814), IL (200081), IN (C-MA-04), KY (KY98046), LA (85084), ME (MA00030), MD (350), MI (9110), MN (025-999-495), NJ (MA015), NY (11627), NC (685), OR (MA-0262), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #525-23-107-88708A1), USFWS (Permit #A24920).

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433692
Report Date: 08/13/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2433692-01	MW-401D	WATER	BARNSTABLE, MA	06/14/24 07:55	06/14/24
L2433692-02	MW-401S	WATER	BARNSTABLE, MA	06/14/24 08:35	06/14/24
L2433692-03	MW-408S	WATER	BARNSTABLE, MA	06/14/24 09:25	06/14/24
L2433692-04	MW-408D	WATER	BARNSTABLE, MA	06/14/24 08:15	06/14/24
L2433692-05	EQUIPMENT BLANK_WLMETER_1	WATER	BARNSTABLE, MA	06/14/24 09:30	06/14/24
L2433692-06	EQUIPMENT BLANK_PERISTALTIC	WATER	BARNSTABLE, MA	06/14/24 10:05	06/14/24
L2433692-07	EQUIPMENT BLANK_SUBMERSIBLE	WATER	BARNSTABLE, MA	06/14/24 10:20	06/14/24
L2433692-08	PC-23S	WATER	BARNSTABLE, MA	06/14/24 10:40	06/14/24
L2433692-09	PC-23D	WATER	BARNSTABLE, MA	06/14/24 09:30	06/14/24
L2433692-10	PC-24	WATER	BARNSTABLE, MA	06/14/24 08:05	06/14/24
L2433692-11	HW-1S	WATER	BARNSTABLE, MA	06/14/24 08:55	06/14/24
L2433692-12	HW-1D	WATER	BARNSTABLE, MA	06/14/24 10:55	06/14/24
L2433692-13	HW-2S	WATER	BARNSTABLE, MA	06/14/24 09:40	06/14/24
L2433692-14	HW-2D	WATER	BARNSTABLE, MA	06/14/24 11:05	06/14/24

Project Name:	BARNSTABLE	**Lab Number:**	L2433692
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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:	BARNSTABLE	**Lab Number:**	L2433692
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Case Narrative (continued)

Report Revision

August 13, 2024: At the client's request, all non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Perfluorinated Alkyl Acids by 1633

L2433692-05R, -06R, and -07R: The sample was re-analyzed due to QC failures in the original analysis. The results of the re-analysis are reported.

L2433692-06R, -09, -10, and WG1940026-1: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

L2433692-09 and -10: The sample was re-analyzed on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

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: Kelly Stenstrom

Title: Technical Director/Representative Date: 08/13/24

ORGANICS

SEMIVOLATILES

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433692
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-01
Client ID: MW-401D
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 07:55
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 11:14
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	4.43	J	ng/l	5.91	0.946	1
Perfluoropentanoic Acid (PFPeA)	8.20		ng/l	2.96	0.791	1
Perfluorobutanesulfonic Acid (PFBS)	1.45	J	ng/l	1.48	0.495	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.91	1.54	1
Perfluorohexanoic Acid (PFHxA)	6.95		ng/l	1.48	0.436	1
Perfluoropentanesulfonic Acid (PFPeS)	0.761	J	ng/l	1.48	0.259	1
Perfluoroheptanoic Acid (PFHpA)	5.11		ng/l	1.48	0.296	1
Perfluorohexanesulfonic Acid (PFHxS)	23.2		ng/l	1.48	0.355	1
Perfluorooctanoic Acid (PFOA)	10.2		ng/l	1.48	0.643	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.91	2.00	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.599	J	ng/l	1.48	0.399	1
Perfluorononanoic Acid (PFNA)	1.74		ng/l	1.48	0.466	1
Perfluorooctanesulfonic Acid (PFOS)	7.69		ng/l	1.48	0.672	1
Perfluorodecanoic Acid (PFDA)	0.643	J	ng/l	1.48	0.599	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.91	2.30	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.48	0.458	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.48	0.806	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.48	0.643	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.48	0.340	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.48	0.399	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.48	0.798	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.48	0.680	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.48	0.554	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.48	0.392	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.91	0.828	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.91	0.931	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.48	0.562	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-01 Date Collected: 06/14/24 07:55

Client ID: MW-401D Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.91	1.22	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.91	1.22	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.48	0.643	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.48	0.680	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.8	3.47	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.8	1.81	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.96	0.421	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.96	0.392	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.96	0.325	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.96	1.74	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.39	2.44	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.0	8.65	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.0	5.83	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-01 Date Collected: 06/14/24 07:55

Client ID: MW-401D Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	49		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	57		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	59		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	59		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	54		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	56		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	53		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	48		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	52		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	56		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	47		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	50		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	44		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	63		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	49		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	44		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	61		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	50		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	47		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	55		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	43		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	47		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	58		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	64		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433692
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-02
Client ID: MW-401S
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 08:35
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 19:23
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	5.80	0.928	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.90	0.776	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.45	0.486	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.80	1.51	1
Perfluorohexanoic Acid (PFHxA)	0.688	J	ng/l	1.45	0.428	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.45	0.254	1
Perfluoroheptanoic Acid (PFHpA)	0.573	J	ng/l	1.45	0.290	1
Perfluorohexanesulfonic Acid (PFHxS)	1.62		ng/l	1.45	0.348	1
Perfluorooctanoic Acid (PFOA)	0.920	J	ng/l	1.45	0.631	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.80	1.96	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.45	0.391	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.45	0.457	1
Perfluorooctanesulfonic Acid (PFOS)	3.70		ng/l	1.45	0.660	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.45	0.587	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.80	2.25	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.45	0.449	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.45	0.790	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.45	0.631	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.45	0.333	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.45	0.391	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.45	0.783	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.45	0.667	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.45	0.544	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.45	0.384	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.80	0.812	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.80	0.913	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.45	0.551	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-02 Date Collected: 06/14/24 08:35

Client ID: MW-401S Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.80	1.20	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.80	1.20	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.45	0.631	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.45	0.667	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.5	3.41	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.5	1.78	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.90	0.413	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.90	0.384	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.90	0.319	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.90	1.71	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.25	2.39	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.2	8.48	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.2	5.72	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-02 Date Collected: 06/14/24 08:35

Client ID: MW-401S Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	61		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	71		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	67		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	73		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	68		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	71		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	64		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	63		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	70		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	63		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	54		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	59		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	42		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	87		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	51		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	56		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	65		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	59		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	55		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	66		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	65		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	71		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	69		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	73		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433692
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-03
Client ID: MW-408S
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 09:25
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 19:36
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.01	0.961	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.00	0.804	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.50	0.503	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.01	1.57	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.50	0.443	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.50	0.263	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.50	0.300	1
Perfluorohexanesulfonic Acid (PFHxS)	0.713	J	ng/l	1.50	0.360	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.50	0.653	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.01	2.03	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.50	0.406	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.50	0.473	1
Perfluorooctanesulfonic Acid (PFOS)	1.56		ng/l	1.50	0.683	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.50	0.608	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.01	2.34	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.50	0.466	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.50	0.818	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.50	0.653	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.50	0.345	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.50	0.406	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.50	0.811	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.50	0.691	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.50	0.563	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.50	0.398	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.01	0.841	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.01	0.946	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.50	0.571	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-03 Date Collected: 06/14/24 09:25

Client ID: MW-408S Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.01	1.24	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.01	1.24	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.50	0.653	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.50	0.691	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.0	3.53	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.0	1.84	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.00	0.428	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.00	0.398	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.00	0.330	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.00	1.77	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.51	2.48	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.5	8.79	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.5	5.92	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-03 Date Collected: 06/14/24 09:25

Client ID: MW-408S Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	84		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	93		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	92		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	119		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	91		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	92		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	89		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	80		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	97		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	88		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	71		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	66		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	65		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	99		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	58		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	64		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	88		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	62		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	57		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	85		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	75		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	73		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	80		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	81		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433692
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-04
Client ID: MW-408D
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 08:15
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 19:49
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.21	J	ng/l	6.07	0.971	1
Perfluoropentanoic Acid (PFPeA)	6.04		ng/l	3.03	0.811	1
Perfluorobutanesulfonic Acid (PFBS)	1.46	J	ng/l	1.52	0.508	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.07	1.58	1
Perfluorohexanoic Acid (PFHxA)	6.86		ng/l	1.52	0.447	1
Perfluoropentanesulfonic Acid (PFPeS)	1.43	J	ng/l	1.52	0.265	1
Perfluoroheptanoic Acid (PFHpA)	2.94		ng/l	1.52	0.303	1
Perfluorohexanesulfonic Acid (PFHxS)	19.6		ng/l	1.52	0.364	1
Perfluorooctanoic Acid (PFOA)	7.30		ng/l	1.52	0.660	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.07	2.05	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.52	0.410	1
Perfluorononanoic Acid (PFNA)	1.27	J	ng/l	1.52	0.478	1
Perfluorooctanesulfonic Acid (PFOS)	57.8		ng/l	1.52	0.690	1
Perfluorodecanoic Acid (PFDA)	1.75		ng/l	1.52	0.614	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.07	2.36	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.52	0.470	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.52	0.827	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.52	0.660	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.52	0.349	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.52	0.410	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.52	0.819	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.52	0.698	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.52	0.569	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.52	0.402	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.07	0.849	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.07	0.956	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.52	0.576	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-04 Date Collected: 06/14/24 08:15

Client ID: MW-408D Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.07	1.25	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.07	1.25	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.52	0.660	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.52	0.698	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.2	3.56	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.2	1.86	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.03	0.432	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.03	0.402	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.03	0.334	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.03	1.79	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.58	2.50	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.9	8.87	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.9	5.98	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-04 Date Collected: 06/14/24 08:15

Client ID: MW-408D Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	85		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	94		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	102		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	127		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	86		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	88		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	95		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	82		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	99		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	92		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	74		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	77		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	71		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	89		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	67		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	70		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	88		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	68		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	66		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	82		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	69		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	79		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	86		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	88		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433692
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-05 R
Client ID: EQUIPMENT BLANK_WLMETER_1
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 09:30
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 14:59
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	5.79	0.927	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.90	0.775	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.45	0.485	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.79	1.51	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.45	0.427	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.45	0.253	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.45	0.290	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.45	0.348	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.45	0.630	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.79	1.96	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.45	0.391	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.45	0.456	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.45	0.659	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.45	0.587	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.79	2.25	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.45	0.449	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.45	0.789	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.45	0.630	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.45	0.333	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.45	0.391	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.45	0.782	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.45	0.666	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.45	0.543	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.45	0.384	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.79	0.811	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.79	0.912	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.45	0.550	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-05 R
Client ID: EQUIPMENT BLANK_WLMETER_1
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 09:30
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.79	1.19	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.79	1.19	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.45	0.630	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.45	0.666	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.5	3.40	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.5	1.77	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.90	0.413	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.90	0.384	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.90	0.319	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.90	1.71	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.24	2.39	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.2	8.47	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.2	5.71	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-05 R
Client ID: EQUIPMENT BLANK_WLMETER_1
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 09:30
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	97		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	100		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	105		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	127		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	100		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	84		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	95		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	120		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	107		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	93		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	94		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	93		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	78		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	114		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	84		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	87		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	85		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	83		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	69		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	87		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	66		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	70		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	72		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	83		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433692
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-06 R
Client ID: EQUIPMENT BLANK_PERISTALTIC
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 10:05
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 15:12
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.07	0.971	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.03	0.812	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.52	0.508	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.07	1.58	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.52	0.448	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.52	0.266	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.52	0.303	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.52	0.364	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.52	0.660	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.07	2.05	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.52	0.410	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.52	0.478	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.52	0.690	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.52	0.614	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.07	2.36	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.52	0.470	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.52	0.827	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.52	0.660	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.52	0.349	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.52	0.410	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.52	0.819	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.52	0.698	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.52	0.569	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.52	0.402	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.07	0.850	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.07	0.956	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.52	0.576	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-06 R
Client ID: EQUIPMENT BLANK_PERISTALTIC
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 10:05
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.07	1.25	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.07	1.25	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.52	0.660	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.52	0.698	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.2	3.56	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.2	1.86	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.03	0.432	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.03	0.402	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.03	0.334	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.03	1.79	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.59	2.50	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.9	8.88	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.9	5.98	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-06 R
Client ID: EQUIPMENT BLANK_PERISTALTIC
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 10:05
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	89		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	85		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	97		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	125		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	90		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	77		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	89		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	116		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	97		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	90		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	82		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	91		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	79		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	**222**	Q	10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	89		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	82		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	88		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	90		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	72		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	74		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	64		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	66		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	72		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	82		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433692
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-07 R
Client ID: EQUIPMENT BLANK_SUBMERSIBLE
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 10:20
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 15:25
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	5.96	0.954	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.98	0.797	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.49	0.499	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.96	1.56	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.49	0.440	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.49	0.261	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.49	0.298	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.49	0.358	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.49	0.648	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	13.7		ng/l	5.96	2.01	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.49	0.402	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.49	0.469	1
Perfluorooctanesulfonic Acid (PFOS)	1.91		ng/l	1.49	0.678	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.49	0.603	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.96	2.32	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.49	0.462	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.49	0.812	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.49	0.648	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.49	0.343	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.49	0.402	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.49	0.804	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.49	0.685	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.49	0.559	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.49	0.395	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.96	0.834	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.96	0.939	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.49	0.566	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-07 R
Client ID: EQUIPMENT BLANK_SUBMERSIBLE
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 10:20
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.96	1.23	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.96	1.23	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.49	0.648	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.49	0.685	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.9	3.50	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.9	1.82	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.98	0.425	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.98	0.395	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.98	0.328	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.98	1.76	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.45	2.46	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.2	8.72	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.2	5.88	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-07 R
Client ID: EQUIPMENT BLANK_SUBMERSIBLE
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 10:20
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	81		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	77		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	84		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	103		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	81		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	69		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	76		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	105		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	84		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	78		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	75		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	75		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	63		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	156		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	64		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	68		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	66		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	65		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	51		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	69		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	57		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	61		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	60		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	69		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433692
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-08
Client ID: PC-23S
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 10:40
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 21:20
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.19	0.990	1
Perfluoropentanoic Acid (PFPeA)	1.03	J	ng/l	3.09	0.828	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.55	0.518	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.19	1.62	1
Perfluorohexanoic Acid (PFHxA)	0.688	J	ng/l	1.55	0.456	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.55	0.271	1
Perfluoroheptanoic Acid (PFHpA)	0.402	J	ng/l	1.55	0.309	1
Perfluorohexanesulfonic Acid (PFHxS)	1.14	J	ng/l	1.55	0.371	1
Perfluorooctanoic Acid (PFOA)	1.09	J	ng/l	1.55	0.673	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.19	2.09	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.55	0.418	1
Perfluorononanoic Acid (PFNA)	0.851	J	ng/l	1.55	0.487	1
Perfluorooctanesulfonic Acid (PFOS)	18.8		ng/l	1.55	0.704	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.55	0.627	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.19	2.41	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.55	0.480	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.55	0.843	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.55	0.673	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.55	0.356	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.55	0.418	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.55	0.836	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.55	0.712	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.55	0.580	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.55	0.410	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.19	0.866	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.19	0.975	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.55	0.588	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-08 Date Collected: 06/14/24 10:40

Client ID: PC-23S Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.19	1.28	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.19	1.28	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.55	0.673	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.55	0.712	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.5	3.64	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.5	1.90	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.09	0.441	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.09	0.410	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.09	0.340	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.09	1.82	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.74	2.55	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	38.7	9.05	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	38.7	6.10	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-08 Date Collected: 06/14/24 10:40

Client ID: PC-23S Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	76		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	87		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	81		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	121		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	83		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	86		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	85		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	75		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	92		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	77		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	74		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	64		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	58		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	99		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	51		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	57		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	78		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	53		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	53		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	80		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	73		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	76		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	70		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	76		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433692
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-09
Client ID: PC-23D
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 09:30
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 21:33
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	37.0		ng/l	5.90	0.944	1
Perfluoropentanoic Acid (PFPeA)	120		ng/l	2.95	0.789	1
Perfluorobutanesulfonic Acid (PFBS)	14.3		ng/l	1.48	0.494	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.90	1.54	1
Perfluorohexanoic Acid (PFHxA)	83.2		ng/l	1.48	0.435	1
Perfluoropentanesulfonic Acid (PFPeS)	28.2		ng/l	1.48	0.258	1
Perfluoroheptanoic Acid (PFHpA)	73.4		ng/l	1.48	0.295	1
Perfluorohexanesulfonic Acid (PFHxS)	223		ng/l	1.48	0.354	1
Perfluorooctanoic Acid (PFOA)	63.1		ng/l	1.48	0.642	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	49.2		ng/l	5.90	1.99	1
Perfluoroheptanesulfonic Acid (PFHpS)	20.2		ng/l	1.48	0.398	1
Perfluorononanoic Acid (PFNA)	41.4		ng/l	1.48	0.465	1
Perfluorooctanesulfonic Acid (PFOS)	881	E	ng/l	1.48	0.671	1
Perfluorodecanoic Acid (PFDA)	5.10		ng/l	1.48	0.598	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	5.10	J	ng/l	5.90	2.29	1
Perfluorononanesulfonic Acid (PFNS)	0.804	J	ng/l	1.48	0.457	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.48	0.804	1
Perfluoroundecanoic Acid (PFUnA)	22.5		ng/l	1.48	0.642	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.48	0.339	1
Perfluorooctanesulfonamide (PFOSA)	11.8		ng/l	1.48	0.398	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.48	0.797	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.48	0.679	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.48	0.553	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.48	0.391	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.90	0.826	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.90	0.930	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.48	0.561	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-09 Date Collected: 06/14/24 09:30

Client ID: PC-23D Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.90	1.22	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.90	1.22	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.48	0.642	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.48	0.679	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.8	3.47	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.8	1.81	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.95	0.420	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.95	0.391	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.95	0.325	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.95	1.74	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.38	2.43	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.9	8.63	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.9	5.82	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-09 Date Collected: 06/14/24 09:30

Client ID: PC-23D Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	89		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	95		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	105		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	127		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	86		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	86		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	93		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	86		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	117		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	90		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	81		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	85		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	84		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	171		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	71		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	93		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	118		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	83		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	76		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	86		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	**108**	Q	11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	**111**	Q	11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	113		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	114		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433692
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-09 D
Client ID: PC-23D
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 09:30
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 14:33
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	847		ng/l	7.38	3.36	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	88		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433692
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-10
Client ID: PC-24
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 08:05
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 21:46
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	16.4		ng/l	5.97	0.955	1
Perfluoropentanoic Acid (PFPeA)	48.8		ng/l	2.98	0.798	1
Perfluorobutanesulfonic Acid (PFBS)	5.69		ng/l	1.49	0.500	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.97	1.56	1
Perfluorohexanoic Acid (PFHxA)	51.2		ng/l	1.49	0.440	1
Perfluoropentanesulfonic Acid (PFPeS)	7.12		ng/l	1.49	0.261	1
Perfluoroheptanoic Acid (PFHpA)	31.1		ng/l	1.49	0.298	1
Perfluorohexanesulfonic Acid (PFHxS)	59.4		ng/l	1.49	0.358	1
Perfluorooctanoic Acid (PFOA)	28.9		ng/l	1.49	0.649	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	16.0		ng/l	5.97	2.01	1
Perfluoroheptanesulfonic Acid (PFHpS)	5.05		ng/l	1.49	0.403	1
Perfluorononanoic Acid (PFNA)	41.9		ng/l	1.49	0.470	1
Perfluorooctanesulfonic Acid (PFOS)	470	E	ng/l	1.49	0.679	1
Perfluorodecanoic Acid (PFDA)	5.98		ng/l	1.49	0.604	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	7.41		ng/l	5.97	2.32	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.49	0.462	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.49	0.813	1
Perfluoroundecanoic Acid (PFUnA)	17.2		ng/l	1.49	0.649	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.49	0.343	1
Perfluorooctanesulfonamide (PFOSA)	7.99		ng/l	1.49	0.403	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.49	0.806	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.49	0.686	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.49	0.559	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.49	0.395	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.97	0.835	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.97	0.940	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.49	0.567	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-10 Date Collected: 06/14/24 08:05

Client ID: PC-24 Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.97	1.23	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.97	1.23	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.49	0.649	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.49	0.686	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.9	3.50	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.9	1.83	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.98	0.425	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.98	0.395	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.98	0.328	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.98	1.76	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.46	2.46	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.3	8.73	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.3	5.88	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-10 Date Collected: 06/14/24 08:05

Client ID: PC-24 Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	**38**	Q	41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	45		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	44		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	52		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	42		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	46		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	**44**	Q	46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	40		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	48		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	43		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	40		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	41		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	37		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	78		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	40		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	44		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	62		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	40		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	36		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	43		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	49		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	51		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	57		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	64		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433692
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-10 D
Client ID: PC-24
Sample Location: BARNSTABLE, MA

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 14:46
Analyst: AC

Date Collected: 06/14/24 08:05
Date Received: 06/14/24
Field Prep: Not Specified

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	474		ng/l	7.46	3.39	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	43		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433692
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-11
Client ID: HW-1S
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 08:55
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 21:59
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.42	J	ng/l	6.00	0.960	1
Perfluoropentanoic Acid (PFPeA)	2.48	J	ng/l	3.00	0.803	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.50	0.503	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.00	1.57	1
Perfluorohexanoic Acid (PFHxA)	2.22		ng/l	1.50	0.443	1
Perfluoropentanesulfonic Acid (PFPeS)	0.413	J	ng/l	1.50	0.263	1
Perfluoroheptanoic Acid (PFHpA)	1.30	J	ng/l	1.50	0.300	1
Perfluorohexanesulfonic Acid (PFHxS)	1.93		ng/l	1.50	0.360	1
Perfluorooctanoic Acid (PFOA)	1.55		ng/l	1.50	0.653	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	4.00	J	ng/l	6.00	2.03	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.50	0.405	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.50	0.473	1
Perfluorooctanesulfonic Acid (PFOS)	2.67		ng/l	1.50	0.683	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.50	0.608	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.00	2.33	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.50	0.465	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.50	0.818	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.50	0.653	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.50	0.345	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.50	0.405	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.50	0.810	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.50	0.690	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.50	0.563	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.50	0.398	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.00	0.840	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.00	0.946	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.50	0.570	1

Project Name: BARNSTABLE
Lab Number: L2433692
Project Number: 01.0177641.00
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-11
Client ID: HW-1S
Sample Location: BARNSTABLE, MA
Date Collected: 06/14/24 08:55
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.00	1.24	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.00	1.24	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.50	0.653	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.50	0.690	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.0	3.53	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.0	1.84	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.00	0.428	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.00	0.398	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.00	0.330	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.00	1.77	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.50	2.48	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.5	8.78	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.5	5.92	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-11 Date Collected: 06/14/24 08:55

Client ID: HW-1S Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	82		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	96		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	91		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	125		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	89		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	95		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	88		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	77		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	85		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	72		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	55		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	60		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	45		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	82		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	49		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	50		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	59		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	55		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	49		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	86		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	57		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	67		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	61		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	64		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433692
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-12
Client ID: HW-1D
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 10:55
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 22:12
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	5.80	0.927	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.90	0.775	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.45	0.485	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.80	1.51	1
Perfluorohexanoic Acid (PFHxA)	0.572	J	ng/l	1.45	0.427	1
Perfluoropentanesulfonic Acid (PFPeS)	0.355	J	ng/l	1.45	0.254	1
Perfluoroheptanoic Acid (PFHpA)	0.580	J	ng/l	1.45	0.290	1
Perfluorohexanesulfonic Acid (PFHxS)	3.93		ng/l	1.45	0.348	1
Perfluorooctanoic Acid (PFOA)	0.956	J	ng/l	1.45	0.630	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.80	1.96	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.45	0.391	1
Perfluorononanoic Acid (PFNA)	0.696	J	ng/l	1.45	0.456	1
Perfluorooctanesulfonic Acid (PFOS)	5.90		ng/l	1.45	0.659	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.45	0.587	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.80	2.25	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.45	0.449	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.45	0.790	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.45	0.630	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.45	0.333	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.45	0.391	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.45	0.782	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.45	0.666	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.45	0.543	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.45	0.384	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.80	0.811	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.80	0.913	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.45	0.551	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-12 Date Collected: 06/14/24 10:55

Client ID: HW-1D Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.80	1.20	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.80	1.20	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.45	0.630	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.45	0.666	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.5	3.40	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.5	1.78	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.90	0.413	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.90	0.384	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.90	0.319	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.90	1.71	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.24	2.39	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.2	8.48	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.2	5.72	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-12 Date Collected: 06/14/24 10:55

Client ID: HW-1D Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	87		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	101		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	95		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	107		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	94		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	95		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	94		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	87		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	102		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	97		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	90		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	79		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	75		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	143		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	76		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	77		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	109		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	72		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	63		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	91		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	90		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	86		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	92		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	94		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433692
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-13
Client ID: HW-2S
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 09:40
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 22:25
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	5.78	0.926	1
Perfluoropentanoic Acid (PFPeA)	1.28	J	ng/l	2.89	0.774	1
Perfluorobutanesulfonic Acid (PFBS)	0.629	J	ng/l	1.45	0.484	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.78	1.51	1
Perfluorohexanoic Acid (PFHxA)	1.16	J	ng/l	1.45	0.427	1
Perfluoropentanesulfonic Acid (PFPeS)	0.506	J	ng/l	1.45	0.253	1
Perfluoroheptanoic Acid (PFHpA)	1.26	J	ng/l	1.45	0.289	1
Perfluorohexanesulfonic Acid (PFHxS)	5.08		ng/l	1.45	0.347	1
Perfluorooctanoic Acid (PFOA)	1.32	J	ng/l	1.45	0.629	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.78	1.95	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.651	J	ng/l	1.45	0.390	1
Perfluorononanoic Acid (PFNA)	7.38		ng/l	1.45	0.456	1
Perfluorooctanesulfonic Acid (PFOS)	77.4		ng/l	1.45	0.658	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.45	0.586	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.78	2.25	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.45	0.448	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.45	0.788	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.45	0.629	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.45	0.333	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.45	0.390	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.45	0.781	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.45	0.665	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.45	0.542	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.45	0.383	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.78	0.810	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.78	0.911	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.45	0.550	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-13 Date Collected: 06/14/24 09:40

Client ID: HW-2S Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.78	1.19	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.78	1.19	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.45	0.629	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.45	0.665	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.5	3.40	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.5	1.77	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.89	0.412	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.89	0.383	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.89	0.318	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.89	1.71	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.23	2.39	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.2	8.46	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.2	5.70	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-13 Date Collected: 06/14/24 09:40

Client ID: HW-2S Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	79		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	89		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	89		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	124		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	84		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	86		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	86		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	79		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	91		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	71		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	68		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	61		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	61		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	90		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	50		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	61		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	67		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	54		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	54		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	79		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	76		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	75		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	75		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	76		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433692
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-14
Client ID: HW-2D
Sample Location: BARNSTABLE, MA

Date Collected: 06/14/24 11:05
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 22:38
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	7.79		ng/l	5.87	0.939	1
Perfluoropentanoic Acid (PFPeA)	19.2		ng/l	2.94	0.785	1
Perfluorobutanesulfonic Acid (PFBS)	1.35	J	ng/l	1.47	0.492	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.87	1.53	1
Perfluorohexanoic Acid (PFHxA)	13.3		ng/l	1.47	0.433	1
Perfluoropentanesulfonic Acid (PFPeS)	1.43	J	ng/l	1.47	0.257	1
Perfluoroheptanoic Acid (PFHpA)	5.28		ng/l	1.47	0.294	1
Perfluorohexanesulfonic Acid (PFHxS)	15.8		ng/l	1.47	0.352	1
Perfluorooctanoic Acid (PFOA)	9.31		ng/l	1.47	0.638	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.87	1.98	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.47	0.396	1
Perfluorononanoic Acid (PFNA)	1.96		ng/l	1.47	0.462	1
Perfluorooctanesulfonic Acid (PFOS)	49.9		ng/l	1.47	0.668	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.47	0.594	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.87	2.28	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.47	0.455	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.47	0.800	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.47	0.638	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.47	0.338	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.47	0.396	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.47	0.793	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.47	0.675	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.47	0.550	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.47	0.389	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.87	0.822	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.87	0.925	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.47	0.558	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-14 Date Collected: 06/14/24 11:05

Client ID: HW-2D Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.87	1.21	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.87	1.21	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.47	0.638	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.47	0.675	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.7	3.45	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.7	1.80	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.94	0.418	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.94	0.389	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.94	0.323	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.94	1.73	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.34	2.42	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.7	8.59	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.7	5.79	1

Project Name: BARNSTABLE **Lab Number:** L2433692

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433692-14 Date Collected: 06/14/24 11:05

Client ID: HW-2D Date Received: 06/14/24

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	84		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	96		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	100		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	119		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	87		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	89		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	91		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	86		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	98		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	75		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	70		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	66		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	67		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	117		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	58		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	62		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	74		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	58		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	54		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	83		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	77		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	75		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	73		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	77		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433692
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/27/24 10:09
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-14 Batch: WG1940026-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.40	1.02
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.20	0.856
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.60	0.536
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.40	1.67
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.60	0.472
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.60	0.280
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.60	0.320
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.60	0.384
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.60	0.696
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.40	2.16
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.60	0.432
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.60	0.504
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.60	0.728
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.648
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.40	2.49
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.496
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.872
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.696
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.368
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.432
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.864
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.736
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.600
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.424
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.40	0.896
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.40	1.01
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.608

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433692
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/27/24 10:09
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-14 Batch: WG1940026-1					
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.40	1.32
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.40	1.32
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.696
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.736
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.76
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.456
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.424
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.352
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	1.89
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.00	2.64
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.0	9.36
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.0	6.31

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433692
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/27/24 10:09
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 06:02

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-14 Batch: WG1940026-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	37		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	44		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	43		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	47		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	42		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	40		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	40		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	38		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	41		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	36		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	27		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	34		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	**19**	Q	20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	40		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	29		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	24		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	33		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	26		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	**18**	Q	20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	41		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	22		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	**19**	Q	20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	25		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	28		20-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433692
Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-14 Batch: WG1940026-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	110		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	115		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	123		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	119		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	110		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	119		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	120		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	107		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	125		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	127		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	126		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	102		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	132		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	116		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	95		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	130		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	115		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	110		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	108		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	102		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	104		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	138		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433692
Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-14 Batch: WG1940026-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	125		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	127		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	119		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	128		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	118		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	112		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	101		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	98		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	92		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	102		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	108		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	105		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	113		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	120		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	105		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	119		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	97		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	74		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433692

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-14 Batch: WG1940026-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	86				20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	102				20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	87				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	104				20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	92				20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	97				20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	92				20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	82				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	98				20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	95				20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	80				20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	95				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	79				20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	106				20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	93				20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	75				20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	93				20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	83				20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	74				20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	91				20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	71				20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	76				20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	85				20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	87				20-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433692
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-14 Batch: WG1940026-3								
Perfluorobutanoic Acid (PFBA)	118		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	127		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	118		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	116		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	121		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	123		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	120		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	115		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	127		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	117		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	129		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	105		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	119		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	110		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	120		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	127		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	120		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	128		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	116		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	111		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	120		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	132		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433692
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-14 Batch: WG1940026-3								
Perfluorotridecanoic Acid (PFTrDA)	124		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	119		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	116		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	120		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	127		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	101		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	97		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	115		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	114		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	110		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	117		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	137		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	113		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	110		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	110		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	122		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	102		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	80		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433692

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-14 Batch: WG1940026-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	85				20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	91				20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	83				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	94				20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	82				20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	84				20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	85				20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	74				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	102				20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85				20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	76				20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	83				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	84				20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	96				20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	77				20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	71				20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	103				20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	79				20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	73				20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	84				20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	69				20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	69				20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	78				20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	80				20-150

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433692
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-14 QC Batch ID: WG1940026-4 WG1940026-5 QC Sample: L2433692-01 Client ID: MW-401D												
Perfluorobutanoic Acid (PFBA)	4.43J	71.5	82.4	109		85.2	115		40-150	3		30
Perfluoropentanoic Acid (PFPeA)	8.20	35.7	48.9	114		51.2	122		40-150	5		30
Perfluorobutanesulfonic Acid (PFBS)	1.45J	15.8	19.4	113		19.8	117		40-150	2		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	67	73.1	109		70.1	106		40-150	4		30
Perfluorohexanoic Acid (PFHxA)	6.95	17.9	27.3	114		29.0	125		40-150	6		30
Perfluoropentanesulfonic Acid (PFPeS)	0.761J	16.8	19.0	108		19.7	114		40-150	4		30
Perfluoroheptanoic Acid (PFHpA)	5.11	17.9	23.7	104		24.8	112		40-150	5		30
Perfluorohexanesulfonic Acid (PFHxS)	23.2	16.3	37.5	88		39.5	101		40-150	5		30
Perfluorooctanoic Acid (PFOA)	10.2	17.9	30.3	113		30.6	116		40-150	1		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	67.9	73.5	108		76.9	115		40-150	5		30
Perfluoroheptanesulfonic Acid (PFHpS)	0.599J	17	22.0	126		21.1	122		40-150	4		30
Perfluorononanoic Acid (PFNA)	1.74	17.9	19.5	99		23.2	122		40-150	17		30
Perfluorooctanesulfonic Acid (PFOS)	7.69	16.6	26.6	114		27.1	119		40-150	2		30
Perfluorodecanoic Acid (PFDA)	0.643J	17.9	21.8	118		20.8	114		40-150	5		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	68.6	82.7	121		94.0	139		40-150	13		30
Perfluorononanesulfonic Acid (PFNS)	ND	17.2	20.8	121		20.2	119		40-150	3		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	17.9	19.1	107		20.9	119		40-150	9		30
Perfluoroundecanoic Acid (PFUnA)	ND	17.9	22.9	128		24.0	136		40-150	5		30
Perfluorodecanesulfonic Acid (PFDS)	ND	17.2	20.3	118		17.9	105		40-150	13		30
Perfluorooctanesulfonamide (PFOSA)	ND	17.9	19.0	106		21.2	120		40-150	11		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	17.9	22.0	123		21.6	123		40-150	2		30
Perfluorododecanoic Acid (PFDoA)	ND	17.9	20.4	114		23.0	131		40-150	12		30

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433692
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-14 QC Batch ID: WG1940026-4 WG1940026-5 QC Sample: L2433692-01 Client ID: MW-401D												
Perfluorotridecanoic Acid (PFTrDA)	ND	17.9	22.2	124		22.8	129		40-150	3		30
Perfluorotetradecanoic Acid (PFTeDA)	ND	17.9	19.3	108		19.9	113		40-150	3		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	71.5	77.1	108		78.9	112		40-150	2		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	67.5	73.6	109		76.5	115		40-150	4		30
Perfluorododecanesulfonic Acid (PFDoS)	ND	17.3	22.6	130		18.9	111		40-150	18		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	66.8	60.6	91		66.0	100		40-150	9		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	67.5	59.3	88		62.0	93		40-150	4		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	17.9	18.7	105		22.6	128		40-150	19		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	17.9	21.9	123		20.4	116		40-150	7		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	179	186	104		193	110		40-150	4		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	179	191	107		204	116		40-150	7		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	35.7	42.9	120		45.9	130		40-150	7		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	35.7	37.7	106		39.5	112		40-150	5		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	31.8	33.4	105		34.1	109		40-150	2		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	35.7	34.5	96		36.6	104		40-150	6		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	89.3	99.5	111		103	117		40-150	3		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	447	405	91		430	98		40-150	6		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	447	373	84		398	90		40-150	6		30

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433692
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-14 QC Batch ID: WG1940026-4 WG1940026-5 QC Sample: L2433692-01 Client ID: MW-401D

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	60		70		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	86		110		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	80		103		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	69		79		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	80		90		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	75		80		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	68		70		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	75		80		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	73		77		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	71		86		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	66		68		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	59		79		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	73		88		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	57		67		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	63		81		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	71		76		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	73		78		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	66		71		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	61		66		20-150
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	73		82		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	80		85		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	63		73		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	70		76		20-150

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433692

Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-14 QC Batch ID: WG1940026-4 WG1940026-5 QC Sample: L2433692-01 Client ID: MW-401D												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	72		77		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433692
Report Date: 08/13/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2433692-01A	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-01B	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-01C	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-02A	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-02B	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-02C	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-03A	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-03B	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-03C	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-04A	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-04B	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-04C	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-05A	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-05B	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-05C	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-06A	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-06B	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-06C	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-07A	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-07B	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-07C	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2433692-08A	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433692
Report Date: 08/13/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2433692-08B	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-08C	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-09A	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-09B	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-09C	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-10A	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-10B	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-10C	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-11A	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-11B	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-11C	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-12A	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-12B	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-12C	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-13A	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-13B	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-13C	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-14A	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-14B	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)
L2433692-14C	Plastic 500ml unpreserved	A	NA		3.8	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433692
Report Date: 08/13/24

PFAS PARAMETER SUMMARY

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

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433692
Report Date: 08/13/24

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:	BARNSTABLE	**Lab Number:**	L2433692
Project Number:	01.0177641.00	**Report Date:**	08/13/24

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

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

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

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

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

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

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

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

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2433692
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2433692
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

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

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

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

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

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

REFERENCES

144 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. Draft EPA Method 1633, EPA Document 821-D-22-001, June 2022.

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

Mansfield Facility
SM 2540D: TSS.
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.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

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

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, 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 2

Date Rec'd in Lab: 6/17/24

ALPHA Job #: L2433692

8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: G2A GeoEnvironmental

Address: 249 Vanderbilt Ave
Norwood, MA 02062

Phone: (781) 278-3700 // 781-989-

Email: Flora.Su@g2a.com
Jennifer.Mckechnie@g2a.com
Daniele.Leone@g2a.com;
Rowan.Thompson@g2a.com

Additional Project Information:
① Matrix for Equipment Blanks is PFAS-free DI water.

Project Information

Project Name: Barnstable

Project Location: Barnstable, MA

Project #: 01.0177641.00

Project Manager: Jennifer Mckechnie

ALPHA Quote #: 27478

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)

Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☒ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ANALYSIS

VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
EPA 1633 (PFAS)

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Sample Comments	TOTAL # BOTTLES
33692-01	MW-401D	6/14/24	0755	GW	OLB		3
-02	MW-401S		0835	GW	OLB		3
-03	MW-409S		0925	GW	KC		3
-04	MW-409D		0915	GW	KC		3
-05	Equipment Blank_WLMeter_1		0730	GW X1	OLB		3
-06	Equipment Blank_Peristaltic		1005	X1	KC		3
-07	Equipment Blank_Submersible		1020	X1	OLB		3
-08	PC-23S		1040	GW	ARM		3
-09	PC-23D		0930	GW	ARM		3
-10	PC-24		0805	GW	ARM		3
	Container Type					P	
	Preservative					A	

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Flora Su	06/14/24 1249	[illegible] ML	6/17 12:49
[illegible] ML	6/14 (7:5)	[illegible]	6/14 1751
[illegible]	6/19/24 1525	[illegible]	6/07 M 1525
[illegible]	6/17/24 1646	Emma Donovan	6/17/24 16:40

All samples submitted are subject to Alpha's Terms and Conditions.
See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

CHAIN OF CUSTODY

PAGE 2 OF 2

ALPHA ANALYTICAL
9 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 6/17/24

ALPHA Job #: L2433692

Client Information

Client: GZA GeoEnvironmental, Inc.
Address: 249 Vanderbilt Avenue
Norwood, MA 02062
Phone: 781-589-3866
Email: Jennifer.McKechnie@gza.com; Rowan.Thompson@gza.com; Flora.Su@gza.com; David.Leane@gza.com
Additional Project Information:

Project Information

Project Name: Barnstable
Project Location: Barnstable, MA
Project #: 01.0177641.00
Project Manager: Jennifer McKechnie
ALPHA Quote #: 27478

Turn-Around Time

(X) Standard ☐ RUSH (only confirmed if pre-approved)
Date Due:

Report Information - Data Deliverables

(X) ADEx (X) EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

(X) Yes ☐ No MA MCP Analytical Methods
☐ Yes (X) No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
(X) Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes (X) No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	PFAS: EPA 1633	TOTAL # BOTTLES
(P3)	PC-25	6/14/24		GW		X	3
33692-11	HW-1S	6/14/24	0855	GW	FKS	X	3
-12	HW-1D	06/14/24	1055	GW	FKS	X	3
-13	HW-2S	6/14/24	0940	GW	(P3) NCL FKS	X	3
-14	HW-2D	6/14/24	1105	GW	NCL	X	3
						Container Type: P	
						Preservative: A	

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO
Filtration: ☐ Field ☐ Lab to do
Preservation: ☐ Lab to do

Sample Comments

Container Type: P= Plastic, A= Amber glass, V= Vial, G= Glass, B= Bacteria cup, C= Cube, O= Other, E= Encore, D= BOD Bottle

Preservative: A= None, B= HCl, C= HNO_3, D= H_2SO_4, E= NaOH, F= MeOH, G= $NaHSO_4$, H= $Na_2S_2O_3$, I= Ascorbic Acid, J= NH_4Cl, K= Zn Acetate, O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Flora Su	06/14/24 1249		6/14 12:49
	6/14 17:31		6/14 1751
	6/17/24 1525		6/17/24 1525
	6/17/24 1440		6/17/24 16:40

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L2433695
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Jennifer McKechnie
Phone:	(781) 278-3864
Project Name:	BARNSTABLE
Project Number:	01.0177641.00
Report Date:	08/13/24

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0825), DoD (L2474), FL (E87814), IL (200081), IN (C-MA-04), KY (KY98046), LA (85084), ME (MA00030), MD (350), MI (9110), MN (025-999-495), NJ (MA015), NY (11627), NC (685), OR (MA-0262), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #525-23-107-88708A1), USFWS (Permit #A24920).

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2433695-01	MW-12I	WATER	155 S FLINT ROCK RD	06/12/24 13:45	06/14/24
L2433695-02	MW-12D	WATER	155 S FLINT ROCK RD	06/12/24 14:40	06/14/24
L2433695-03	MW-12S	WATER	155 S FLINT ROCK RD	06/12/24 15:45	06/14/24
L2433695-04	MW-15S	WATER	155 S FLINT ROCK RD	06/12/24 12:45	06/14/24
L2433695-05	MW-15D	WATER	155 S FLINT ROCK RD	06/12/24 11:45	06/14/24
L2433695-06	MW-19A	WATER	155 S FLINT ROCK RD	06/12/24 11:15	06/14/24
L2433695-07	MW-19B	WATER	155 S FLINT ROCK RD	06/12/24 12:25	06/14/24
L2433695-08	MW-22	WATER	155 S FLINT ROCK RD	06/12/24 15:40	06/14/24
L2433695-09	MW-23	WATER	155 S FLINT ROCK RD	06/12/24 14:40	06/14/24
L2433695-10	PC-1	WATER	155 S FLINT ROCK RD	06/12/24 15:10	06/14/24
L2433695-11	PC-11	WATER	155 S FLINT ROCK RD	06/12/24 11:35	06/14/24
L2433695-12	PC-13	WATER	155 S FLINT ROCK RD	06/12/24 16:35	06/14/24
L2433695-13	PC-16D	WATER	155 S FLINT ROCK RD	06/12/24 13:00	06/14/24
L2433695-14	PC-16S	WATER	155 S FLINT ROCK RD	06/12/24 13:50	06/14/24
L2433695-15	PC-17	WATER	155 S FLINT ROCK RD	06/12/24 14:45	06/14/24
L2433695-16	PC-26	WATER	155 S FLINT ROCK RD	06/12/24 12:50	06/14/24
L2433695-17	PC-30	WATER	155 S FLINT ROCK RD	06/12/24 16:00	06/14/24
L2433695-18	PC-38	WATER	155 S FLINT ROCK RD	06/12/24 10:20	06/14/24

Project Name:	BARNSTABLE	**Lab Number:**	L2433695
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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:	BARNSTABLE	**Lab Number:**	L2433695
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Case Narrative (continued)

Report Revision

August 13, 2024: At the client's request, all non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Perfluorinated Alkyl Acids by 1633

L2433695-01, -03, -10, and -11: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

L2433695-01, -03, -10, -12, and -13: The sample was re-analyzed on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

L2433695-11: The sample was re-extracted on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-extraction was performed only for the compound(s) that exceeded the calibration range.

The WG1939811-2 LCS recovery, associated with L2433695-01 through -18, is above the acceptance criteria for 3-perfluoroheptyl propanoic acid (7:3ftca) (167%); however, the associated samples are non-detect to the RL for this target analyte. The results of the original analysis are reported.

The WG1939811-4R MS/MSD recoveries, performed on L2433695-04, are outside the acceptance criteria for 1h,1h,2h,2h-perfluorodecanesulfonic acid (8:2fts) (155%).

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: Kelly Stenstrom

Title: Technical Director/Representative Date: 08/13/24

ORGANICS

SEMIVOLATILES

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-01
Client ID: MW-12I
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 13:45
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 08:52
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	36.5		ng/l	6.09	0.975	1
Perfluoropentanoic Acid (PFPeA)	90.3		ng/l	3.05	0.815	1
Perfluorobutanesulfonic Acid (PFBS)	7.90		ng/l	1.52	0.510	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.09	1.59	1
Perfluorohexanoic Acid (PFHxA)	73.3		ng/l	1.52	0.449	1
Perfluoropentanesulfonic Acid (PFPeS)	15.3		ng/l	1.52	0.267	1
Perfluoroheptanoic Acid (PFHpA)	65.8		ng/l	1.52	0.305	1
Perfluorohexanesulfonic Acid (PFHxS)	152		ng/l	1.52	0.366	1
Perfluorooctanoic Acid (PFOA)	63.1		ng/l	1.52	0.663	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	13.6		ng/l	6.09	2.06	1
Perfluoroheptanesulfonic Acid (PFHpS)	12.3		ng/l	1.52	0.411	1
Perfluorononanoic Acid (PFNA)	67.7		ng/l	1.52	0.480	1
Perfluorooctanesulfonic Acid (PFOS)	658	E	ng/l	1.52	0.693	1
Perfluorodecanoic Acid (PFDA)	7.70		ng/l	1.52	0.617	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	5.37	J	ng/l	6.09	2.37	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.52	0.472	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.52	0.830	1
Perfluoroundecanoic Acid (PFUnA)	22.4		ng/l	1.52	0.663	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.52	0.350	1
Perfluorooctanesulfonamide (PFOSA)	18.7		ng/l	1.52	0.411	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.52	0.823	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.52	0.701	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.52	0.571	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.52	0.404	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.09	0.853	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.09	0.960	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.52	0.579	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-01 Date Collected: 06/12/24 13:45

Client ID: MW-12I Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.09	1.26	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.09	1.26	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.52	0.663	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.52	0.701	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.2	3.58	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.2	1.87	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.05	0.434	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.05	0.404	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.05	0.335	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.05	1.80	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.62	2.51	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	38.1	8.91	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	38.1	6.01	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-01 Date Collected: 06/12/24 13:45

Client ID: MW-12I Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	85		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	92		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	90		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	**207**	Q	20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	88		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	86		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	84		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	78		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	112		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	81		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	77		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	71		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	66		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	120		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	63		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	68		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	94		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	60		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	55		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	83		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	75		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	79		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	78		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	83		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-01 D
Client ID: MW-12I
Sample Location: 155 S FLINT ROCK RD

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 07:11
Analyst: AC

Date Collected: 06/12/24 13:45
Date Received: 06/14/24
Field Prep: Not Specified

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	627		ng/l	7.62	3.46	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	86		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-02
Client ID: MW-12D
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 14:40
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 09:05
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	14.6		ng/l	6.06	0.970	1
Perfluoropentanoic Acid (PFPeA)	38.0		ng/l	3.03	0.811	1
Perfluorobutanesulfonic Acid (PFBS)	5.60		ng/l	1.52	0.508	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.06	1.58	1
Perfluorohexanoic Acid (PFHxA)	36.1		ng/l	1.52	0.447	1
Perfluoropentanesulfonic Acid (PFPeS)	7.50		ng/l	1.52	0.265	1
Perfluoroheptanoic Acid (PFHpA)	29.6		ng/l	1.52	0.303	1
Perfluorohexanesulfonic Acid (PFHxS)	53.3		ng/l	1.52	0.364	1
Perfluorooctanoic Acid (PFOA)	24.4		ng/l	1.52	0.660	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	2.30	J	ng/l	6.06	2.05	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.87		ng/l	1.52	0.409	1
Perfluorononanoic Acid (PFNA)	25.6		ng/l	1.52	0.478	1
Perfluorooctanesulfonic Acid (PFOS)	149		ng/l	1.52	0.690	1
Perfluorodecanoic Acid (PFDA)	1.19	J	ng/l	1.52	0.614	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.06	2.36	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.52	0.470	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.52	0.826	1
Perfluoroundecanoic Acid (PFUnA)	3.21		ng/l	1.52	0.660	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.52	0.349	1
Perfluorooctanesulfonamide (PFOSA)	1.30	J	ng/l	1.52	0.409	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.52	0.819	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.52	0.698	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.52	0.569	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.52	0.402	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.06	0.849	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.06	0.955	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.52	0.576	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-02 Date Collected: 06/12/24 14:40

Client ID: MW-12D Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.06	1.25	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.06	1.25	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.52	0.660	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.52	0.698	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.2	3.56	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.2	1.86	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.03	0.432	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.03	0.402	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.03	0.334	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.03	1.79	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.58	2.50	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.9	8.87	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.9	5.98	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-02 Date Collected: 06/12/24 14:40

Client ID: MW-12D Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	82		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	90		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	93		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	141		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	84		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	82		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	90		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	79		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	110		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	82		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	83		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	77		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	81		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	128		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	72		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	72		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	113		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	71		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	59		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	79		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	92		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	94		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	85		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	91		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-03
Client ID: MW-12S
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 15:45
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 09:18
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	48.4		ng/l	5.89	0.942	1
Perfluoropentanoic Acid (PFPeA)	148		ng/l	2.94	0.788	1
Perfluorobutanesulfonic Acid (PFBS)	16.1		ng/l	1.47	0.493	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.89	1.54	1
Perfluorohexanoic Acid (PFHxA)	121		ng/l	1.47	0.434	1
Perfluoropentanesulfonic Acid (PFPeS)	23.1		ng/l	1.47	0.258	1
Perfluoroheptanoic Acid (PFHpA)	93.6		ng/l	1.47	0.294	1
Perfluorohexanesulfonic Acid (PFHxS)	380		ng/l	1.47	0.353	1
Perfluorooctanoic Acid (PFOA)	160		ng/l	1.47	0.640	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	91.6		ng/l	5.89	1.99	1
Perfluoroheptanesulfonic Acid (PFHpS)	19.8		ng/l	1.47	0.397	1
Perfluorononanoic Acid (PFNA)	42.1		ng/l	1.47	0.464	1
Perfluorooctanesulfonic Acid (PFOS)	1020	E	ng/l	1.47	0.670	1
Perfluorodecanoic Acid (PFDA)	4.47		ng/l	1.47	0.596	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	5.35	J	ng/l	5.89	2.29	1
Perfluorononanesulfonic Acid (PFNS)	0.729	J	ng/l	1.47	0.456	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.47	0.802	1
Perfluoroundecanoic Acid (PFUnA)	11.3		ng/l	1.47	0.640	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.47	0.338	1
Perfluorooctanesulfonamide (PFOSA)	113		ng/l	1.47	0.397	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.47	0.795	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.47	0.677	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.47	0.552	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.47	0.390	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.89	0.824	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.89	0.927	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.47	0.559	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-03 Date Collected: 06/12/24 15:45

Client ID: MW-12S Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.89	1.21	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.89	1.21	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	1.49		ng/l	1.47	0.640	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.47	0.677	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.7	3.46	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.7	1.80	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.94	0.420	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.94	0.390	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.94	0.324	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.94	1.74	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.36	2.43	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.8	8.61	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.8	5.81	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-03 Date Collected: 06/12/24 15:45

Client ID: MW-12S Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	83		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	84		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	97		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	**231**	Q	20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	83		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	84		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	87		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	77		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	120		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	79		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	78		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	71		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	103		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	128		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	68		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	84		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	120		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	68		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	59		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	80		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	92		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	93		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	91		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	95		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-03 D
Client ID: MW-12S
Sample Location: 155 S FLINT ROCK RD

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 07:24
Analyst: AC

Date Collected: 06/12/24 15:45
Date Received: 06/14/24
Field Prep: Not Specified

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	1070		ng/l	7.36	3.35	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	84		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-04
Client ID: MW-15S
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 12:45
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 09:30
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.96	J	ng/l	5.66	0.905	1
Perfluoropentanoic Acid (PFPeA)	4.61		ng/l	2.83	0.756	1
Perfluorobutanesulfonic Acid (PFBS)	0.523	J	ng/l	1.41	0.474	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.66	1.48	1
Perfluorohexanoic Acid (PFHxA)	3.73		ng/l	1.41	0.417	1
Perfluoropentanesulfonic Acid (PFPeS)	0.551	J	ng/l	1.41	0.247	1
Perfluoroheptanoic Acid (PFHpA)	3.19		ng/l	1.41	0.283	1
Perfluorohexanesulfonic Acid (PFHxS)	6.59		ng/l	1.41	0.339	1
Perfluorooctanoic Acid (PFOA)	7.22		ng/l	1.41	0.615	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.66	1.91	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.410	J	ng/l	1.41	0.382	1
Perfluorononanoic Acid (PFNA)	0.919	J	ng/l	1.41	0.445	1
Perfluorooctanesulfonic Acid (PFOS)	11.9		ng/l	1.41	0.643	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.41	0.572	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.66	2.20	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.41	0.438	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.41	0.770	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.41	0.615	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.41	0.325	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.41	0.382	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.41	0.763	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.41	0.650	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.41	0.530	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.41	0.375	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.66	0.792	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.66	0.891	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.41	0.537	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-04 Date Collected: 06/12/24 12:45

Client ID: MW-15S Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.66	1.17	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.66	1.17	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.41	0.615	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.41	0.650	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.1	3.32	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.1	1.73	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.83	0.403	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.83	0.375	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.83	0.311	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.83	1.67	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.07	2.33	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	35.3	8.27	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	35.3	5.58	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-04 Date Collected: 06/12/24 12:45

Client ID: MW-15S Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	78		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	89		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	93		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	137		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	82		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	85		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	92		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	74		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	100		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	83		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	79		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	75		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	73		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	136		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	65		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	69		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	92		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	67		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	65		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	81		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	84		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	87		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	83		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	88		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-05
Client ID: MW-15D
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 11:45
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 12:25
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.36	J	ng/l	6.18	0.989	1
Perfluoropentanoic Acid (PFPeA)	10.7		ng/l	3.09	0.826	1
Perfluorobutanesulfonic Acid (PFBS)	2.20		ng/l	1.54	0.517	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.18	1.61	1
Perfluorohexanoic Acid (PFHxA)	7.18		ng/l	1.54	0.456	1
Perfluoropentanesulfonic Acid (PFPeS)	1.00	J	ng/l	1.54	0.270	1
Perfluoroheptanoic Acid (PFHpA)	3.38		ng/l	1.54	0.309	1
Perfluorohexanesulfonic Acid (PFHxS)	7.84		ng/l	1.54	0.371	1
Perfluorooctanoic Acid (PFOA)	8.52		ng/l	1.54	0.672	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.18	2.08	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.649	J	ng/l	1.54	0.417	1
Perfluorononanoic Acid (PFNA)	2.55		ng/l	1.54	0.486	1
Perfluorooctanesulfonic Acid (PFOS)	29.1		ng/l	1.54	0.703	1
Perfluorodecanoic Acid (PFDA)	2.18		ng/l	1.54	0.626	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.18	2.40	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.54	0.479	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.54	0.842	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.54	0.672	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.54	0.355	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.54	0.417	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.54	0.834	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.54	0.710	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.54	0.579	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.54	0.409	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.18	0.865	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.18	0.973	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.54	0.587	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-05 Date Collected: 06/12/24 11:45

Client ID: MW-15D Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.18	1.27	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.18	1.27	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.54	0.672	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.54	0.710	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.4	3.63	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.4	1.89	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.09	0.440	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.09	0.409	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.09	0.340	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.09	1.82	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.72	2.55	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	38.6	9.04	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	38.6	6.09	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-05 Date Collected: 06/12/24 11:45

Client ID: MW-15D Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	75		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	84		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	82		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	95		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	77		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	84		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	81		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	75		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	88		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	76		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	67		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	66		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	58		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	112		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	62		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	61		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	88		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	66		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	57		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	78		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	75		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	71		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	73		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	76		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-06
Client ID: MW-19A
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 11:15
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 12:38
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	25.3		ng/l	5.97	0.955	1
Perfluoropentanoic Acid (PFPeA)	69.4		ng/l	2.98	0.799	1
Perfluorobutanesulfonic Acid (PFBS)	6.56		ng/l	1.49	0.500	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.97	1.56	1
Perfluorohexanoic Acid (PFHxA)	62.5		ng/l	1.49	0.440	1
Perfluoropentanesulfonic Acid (PFPeS)	11.2		ng/l	1.49	0.261	1
Perfluoroheptanoic Acid (PFHpA)	42.5		ng/l	1.49	0.298	1
Perfluorohexanesulfonic Acid (PFHxS)	107		ng/l	1.49	0.358	1
Perfluorooctanoic Acid (PFOA)	43.0		ng/l	1.49	0.649	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	10.2		ng/l	5.97	2.02	1
Perfluoroheptanesulfonic Acid (PFHpS)	5.79		ng/l	1.49	0.403	1
Perfluorononanoic Acid (PFNA)	50.6		ng/l	1.49	0.470	1
Perfluorooctanesulfonic Acid (PFOS)	369		ng/l	1.49	0.679	1
Perfluorodecanoic Acid (PFDA)	4.50		ng/l	1.49	0.605	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.97	2.32	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.49	0.463	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.49	0.814	1
Perfluoroundecanoic Acid (PFUnA)	5.93		ng/l	1.49	0.649	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.49	0.343	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.49	0.403	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.49	0.806	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.49	0.687	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.49	0.560	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.49	0.396	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.97	0.836	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.97	0.940	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.49	0.567	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-06 Date Collected: 06/12/24 11:15

Client ID: MW-19A Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.97	1.23	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.97	1.23	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.49	0.649	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.49	0.687	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.9	3.51	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.9	1.83	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.98	0.425	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.98	0.396	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.98	0.328	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.98	1.76	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.46	2.46	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.3	8.73	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.3	5.89	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-06 Date Collected: 06/12/24 11:15

Client ID: MW-19A Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	84		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	95		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	96		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	138		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	83		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	89		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	93		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	79		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	113		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	91		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	78		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	84		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	86		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	119		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	80		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	75		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	114		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	77		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	69		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	84		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	94		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	94		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	94		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	98		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-07
Client ID: MW-19B
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 12:25
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 12:51
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.32	J	ng/l	6.11	0.978	1
Perfluoropentanoic Acid (PFPeA)	1.27	J	ng/l	3.06	0.818	1
Perfluorobutanesulfonic Acid (PFBS)	1.76		ng/l	1.53	0.512	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.11	1.60	1
Perfluorohexanoic Acid (PFHxA)	1.03	J	ng/l	1.53	0.451	1
Perfluoropentanesulfonic Acid (PFPeS)	0.397	J	ng/l	1.53	0.267	1
Perfluoroheptanoic Acid (PFHpA)	0.856	J	ng/l	1.53	0.306	1
Perfluorohexanesulfonic Acid (PFHxS)	2.58		ng/l	1.53	0.367	1
Perfluorooctanoic Acid (PFOA)	2.74		ng/l	1.53	0.665	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.11	2.06	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.53	0.413	1
Perfluorononanoic Acid (PFNA)	0.779	J	ng/l	1.53	0.481	1
Perfluorooctanesulfonic Acid (PFOS)	7.30		ng/l	1.53	0.695	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.53	0.619	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.11	2.38	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.53	0.474	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.53	0.833	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.53	0.665	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.53	0.352	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.53	0.413	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.53	0.825	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.53	0.703	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.53	0.573	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.53	0.405	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.11	0.856	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.11	0.963	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.53	0.581	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-07 Date Collected: 06/12/24 12:25

Client ID: MW-19B Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.11	1.26	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.11	1.26	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.53	0.665	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.53	0.703	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.3	3.59	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.3	1.87	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.06	0.436	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.06	0.405	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.06	0.336	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.06	1.80	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.64	2.52	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	38.2	8.94	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	38.2	6.03	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-07 Date Collected: 06/12/24 12:25

Client ID: MW-19B Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	77		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	86		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	87		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	104		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	80		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	83		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	84		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	74		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	86		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	79		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	86		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	80		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	67		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	115		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	67		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	72		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	98		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	73		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	60		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	80		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	84		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	85		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	84		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	85		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-08
Client ID: MW-22
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 15:40
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 13:03
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	5.84	0.934	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.92	0.781	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.46	0.489	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.84	1.52	1
Perfluorohexanoic Acid (PFHxA)	0.533	J	ng/l	1.46	0.430	1
Perfluoropentanesulfonic Acid (PFPeS)	0.416	J	ng/l	1.46	0.255	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.46	0.292	1
Perfluorohexanesulfonic Acid (PFHxS)	5.79		ng/l	1.46	0.350	1
Perfluorooctanoic Acid (PFOA)	1.42	J	ng/l	1.46	0.635	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.84	1.97	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.46	0.394	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.46	0.460	1
Perfluorooctanesulfonic Acid (PFOS)	11.1		ng/l	1.46	0.664	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.46	0.591	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.84	2.27	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.46	0.452	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.46	0.795	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.46	0.635	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.46	0.336	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.46	0.394	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.46	0.788	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.46	0.671	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.46	0.547	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.46	0.387	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.84	0.817	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.84	0.919	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.46	0.554	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-08 Date Collected: 06/12/24 15:40

Client ID: MW-22 Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.84	1.20	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.84	1.20	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.46	0.635	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.46	0.671	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.6	3.43	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.6	1.79	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.92	0.416	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.92	0.387	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.92	0.321	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.92	1.72	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.30	2.41	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.5	8.54	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.5	5.76	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-08 Date Collected: 06/12/24 15:40

Client ID: MW-22 Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	69		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	83		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	79		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	96		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	78		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	78		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	76		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	66		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	82		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	69		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	75		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	75		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	54		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	114		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	68		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	67		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	101		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	72		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	66		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	74		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	86		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	91		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	82		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	84		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-09
Client ID: MW-23
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 14:40
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 13:16
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	12.7		ng/l	5.92	0.947	1
Perfluoropentanoic Acid (PFPeA)	42.0		ng/l	2.96	0.792	1
Perfluorobutanesulfonic Acid (PFBS)	2.03		ng/l	1.48	0.496	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.92	1.55	1
Perfluorohexanoic Acid (PFHxA)	33.6		ng/l	1.48	0.436	1
Perfluoropentanesulfonic Acid (PFPeS)	4.15		ng/l	1.48	0.259	1
Perfluoroheptanoic Acid (PFHpA)	12.9		ng/l	1.48	0.296	1
Perfluorohexanesulfonic Acid (PFHxS)	58.4		ng/l	1.48	0.355	1
Perfluorooctanoic Acid (PFOA)	27.4		ng/l	1.48	0.644	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.92	2.00	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.83		ng/l	1.48	0.399	1
Perfluorononanoic Acid (PFNA)	2.80		ng/l	1.48	0.466	1
Perfluorooctanesulfonic Acid (PFOS)	101		ng/l	1.48	0.673	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.48	0.599	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.92	2.30	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.48	0.459	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.48	0.806	1
Perfluoroundecanoic Acid (PFUnA)	1.45	J	ng/l	1.48	0.644	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.48	0.340	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.48	0.399	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.48	0.799	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.48	0.680	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.48	0.555	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.48	0.392	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.92	0.828	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.92	0.932	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.48	0.562	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-09 Date Collected: 06/12/24 14:40

Client ID: MW-23 Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.92	1.22	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.92	1.22	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.48	0.644	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.48	0.680	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.8	3.48	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.8	1.81	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.96	0.422	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.96	0.392	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.96	0.325	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.96	1.74	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.40	2.44	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.0	8.66	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.0	5.84	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-09 Date Collected: 06/12/24 14:40

Client ID: MW-23 Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	69		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	81		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	76		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	101		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	73		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	76		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	72		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	65		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	85		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	72		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	67		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	65		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	56		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	97		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	59		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	63		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	87		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	60		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	54		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	73		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	75		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	78		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	75		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	79		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-10
Client ID: PC-1
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 15:10
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 18:32
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	72.0		ng/l	5.89	0.942	1
Perfluoropentanoic Acid (PFPeA)	244		ng/l	2.94	0.788	1
Perfluorobutanesulfonic Acid (PFBS)	22.4		ng/l	1.47	0.493	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	1.88	J	ng/l	5.89	1.54	1
Perfluorohexanoic Acid (PFHxA)	186		ng/l	1.47	0.434	1
Perfluoropentanesulfonic Acid (PFPeS)	33.5		ng/l	1.47	0.258	1
Perfluoroheptanoic Acid (PFHpA)	103		ng/l	1.47	0.294	1
Perfluorohexanesulfonic Acid (PFHxS)	290		ng/l	1.47	0.353	1
Perfluorooctanoic Acid (PFOA)	95.1		ng/l	1.47	0.641	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	322		ng/l	5.89	1.99	1
Perfluoroheptanesulfonic Acid (PFHpS)	8.32		ng/l	1.47	0.398	1
Perfluorononanoic Acid (PFNA)	42.8		ng/l	1.47	0.464	1
Perfluorooctanesulfonic Acid (PFOS)	640	E	ng/l	1.47	0.670	1
Perfluorodecanoic Acid (PFDA)	8.90		ng/l	1.47	0.596	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	153		ng/l	5.89	2.29	1
Perfluorononanesulfonic Acid (PFNS)	0.464	JF	ng/l	1.47	0.456	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.47	0.803	1
Perfluoroundecanoic Acid (PFUnA)	54.2		ng/l	1.47	0.641	1
Perfluorodecanesulfonic Acid (PFDS)	0.950	JF	ng/l	1.47	0.339	1
Perfluorooctanesulfonamide (PFOSA)	4.56	F	ng/l	1.47	0.398	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.47	0.795	1
Perfluorododecanoic Acid (PFDoA)	1.27	J	ng/l	1.47	0.677	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.47	0.552	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.47	0.390	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.89	0.825	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.89	0.928	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.47	0.560	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-10 Date Collected: 06/12/24 15:10

Client ID: PC-1 Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.89	1.22	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.89	1.22	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.47	0.641	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.47	0.677	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.7	3.46	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.7	1.80	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.94	0.420	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.94	0.390	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.94	0.324	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.94	1.74	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.36	2.43	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.8	8.62	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.8	5.81	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-10 Date Collected: 06/12/24 15:10

Client ID: PC-1 Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	77		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	79		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	88		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	156		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	73		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	79		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	80		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	72		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	116		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	74		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	69		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	71		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	96		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	108		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	66		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	76		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	115		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	69		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	67		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	75		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	94		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	**99**	Q	11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	95		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	94		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-10 D
Client ID: PC-1
Sample Location: 155 S FLINT ROCK RD

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 13:55
Analyst: AC

Date Collected: 06/12/24 15:10
Date Received: 06/14/24
Field Prep: Not Specified

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	595		ng/l	7.36	3.35	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	79		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-11
Client ID: PC-11
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 11:35
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 18:45
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	139		ng/l	6.00	0.960	1
Perfluoropentanoic Acid (PFPeA)	502		ng/l	3.00	0.802	1
Perfluorobutanesulfonic Acid (PFBS)	75.7		ng/l	1.50	0.502	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	6.87		ng/l	6.00	1.57	1
Perfluorohexanoic Acid (PFHxA)	536	FE	ng/l	1.50	0.442	1
Perfluoropentanesulfonic Acid (PFPeS)	132		ng/l	1.50	0.262	1
Perfluoroheptanoic Acid (PFHpA)	240		ng/l	1.50	0.300	1
Perfluorohexanesulfonic Acid (PFHxS)	1110	E	ng/l	1.50	0.360	1
Perfluorooctanoic Acid (PFOA)	377		ng/l	1.50	0.652	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1630		ng/l	6.00	2.02	1
Perfluoroheptanesulfonic Acid (PFHpS)	93.6		ng/l	1.50	0.405	1
Perfluorononanoic Acid (PFNA)	226		ng/l	1.50	0.472	1
Perfluorooctanesulfonic Acid (PFOS)	8990	E	ng/l	1.50	0.682	1
Perfluorodecanoic Acid (PFDA)	24.2		ng/l	1.50	0.607	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	806		ng/l	6.00	2.33	1
Perfluorononanesulfonic Acid (PFNS)	21.4		ng/l	1.50	0.465	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.50	0.817	1
Perfluoroundecanoic Acid (PFUnA)	171		ng/l	1.50	0.652	1
Perfluorodecanesulfonic Acid (PFDS)	0.922	JF	ng/l	1.50	0.345	1
Perfluorooctanesulfonamide (PFOSA)	15.9		ng/l	1.50	0.405	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.50	0.810	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.50	0.690	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.50	0.562	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.50	0.397	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.00	0.840	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.00	0.945	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.50	0.570	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-11 Date Collected: 06/12/24 11:35

Client ID: PC-11 Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.00	1.24	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.00	1.24	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.50	0.652	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.50	0.690	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.0	3.52	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.0	1.84	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.00	0.427	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.00	0.397	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.00	0.330	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.00	1.77	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.50	2.47	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.5	8.77	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.5	5.92	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-11 Date Collected: 06/12/24 11:35

Client ID: PC-11 Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	87		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	85		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	99		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	211		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	78		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	92		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	83		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	79		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	150		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	79		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	65		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	62		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	77		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	**224**	Q	10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	68		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	**134**	Q	14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	**164**	Q	10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	87		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	81		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	94		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	**166**	Q	11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	**173**	Q	11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	**166**	Q	10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	**166**	Q	10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-11 RE
Client ID: PC-11
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 11:35
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/29/24 09:26
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorohexanoic Acid (PFHxA)	653		ng/l	80.0	23.6	1
Perfluorohexanesulfonic Acid (PFHxS)	1100		ng/l	80.0	19.2	1
Perfluorooctanesulfonic Acid (PFOS)	5600		ng/l	80.0	36.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	83		40-121
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	79		46-115
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	82		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-12
Client ID: PC-13
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 16:35
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 18:58
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	53.7		ng/l	5.78	0.924	1
Perfluoropentanoic Acid (PFPeA)	157		ng/l	2.89	0.772	1
Perfluorobutanesulfonic Acid (PFBS)	24.5		ng/l	1.44	0.484	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.78	1.51	1
Perfluorohexanoic Acid (PFHxA)	152		ng/l	1.44	0.426	1
Perfluoropentanesulfonic Acid (PFPeS)	26.2		ng/l	1.44	0.253	1
Perfluoroheptanoic Acid (PFHpA)	97.8		ng/l	1.44	0.289	1
Perfluorohexanesulfonic Acid (PFHxS)	207		ng/l	1.44	0.346	1
Perfluorooctanoic Acid (PFOA)	97.2		ng/l	1.44	0.628	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	99.4		ng/l	5.78	1.95	1
Perfluoroheptanesulfonic Acid (PFHpS)	13.8		ng/l	1.44	0.390	1
Perfluorononanoic Acid (PFNA)	112		ng/l	1.44	0.455	1
Perfluorooctanesulfonic Acid (PFOS)	876	E	ng/l	1.44	0.657	1
Perfluorodecanoic Acid (PFDA)	9.98		ng/l	1.44	0.585	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	16.7		ng/l	5.78	2.24	1
Perfluorononanesulfonic Acid (PFNS)	0.924	J	ng/l	1.44	0.448	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.44	0.787	1
Perfluoroundecanoic Acid (PFUnA)	20.6		ng/l	1.44	0.628	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.44	0.332	1
Perfluorooctanesulfonamide (PFOSA)	26.8		ng/l	1.44	0.390	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.44	0.780	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.44	0.664	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.44	0.541	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.44	0.383	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.78	0.809	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.78	0.910	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.44	0.549	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-12 Date Collected: 06/12/24 16:35

Client ID: PC-13 Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.78	1.19	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.78	1.19	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.44	0.628	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.44	0.664	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.4	3.39	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.4	1.77	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.89	0.412	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.89	0.383	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.89	0.318	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.89	1.70	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.22	2.38	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.1	8.45	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.1	5.70	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-12 Date Collected: 06/12/24 16:35

Client ID: PC-13 Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	83		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	84		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	91		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	217		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	82		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	83		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	87		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	74		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	119		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	75		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	64		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	65		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	81		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	133		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	53		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	69		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	81		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	54		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	43		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	79		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	83		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	78		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	76		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	80		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-12 D
Client ID: PC-13
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 16:35
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 14:08
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	715		ng/l	7.22	3.28	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	93		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-13
Client ID: PC-16D
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 13:00
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 19:11
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	37.8		ng/l	6.39	1.02	1
Perfluoropentanoic Acid (PFPeA)	105		ng/l	3.20	0.855	1
Perfluorobutanesulfonic Acid (PFBS)	12.0		ng/l	1.60	0.535	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.39	1.67	1
Perfluorohexanoic Acid (PFHxA)	96.2		ng/l	1.60	0.471	1
Perfluoropentanesulfonic Acid (PFPeS)	15.5		ng/l	1.60	0.280	1
Perfluoroheptanoic Acid (PFHpA)	61.7		ng/l	1.60	0.320	1
Perfluorohexanesulfonic Acid (PFHxS)	142		ng/l	1.60	0.383	1
Perfluorooctanoic Acid (PFOA)	48.6		ng/l	1.60	0.695	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	39.6		ng/l	6.39	2.16	1
Perfluoroheptanesulfonic Acid (PFHpS)	7.10		ng/l	1.60	0.431	1
Perfluorononanoic Acid (PFNA)	51.0		ng/l	1.60	0.503	1
Perfluorooctanesulfonic Acid (PFOS)	566	E	ng/l	1.60	0.727	1
Perfluorodecanoic Acid (PFDA)	5.47		ng/l	1.60	0.647	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	10.4		ng/l	6.39	2.48	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.495	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.871	1
Perfluoroundecanoic Acid (PFUnA)	17.4		ng/l	1.60	0.695	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.367	1
Perfluorooctanesulfonamide (PFOSA)	16.1		ng/l	1.60	0.431	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.863	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.735	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.599	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.423	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.39	0.895	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.39	1.01	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.607	1

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-13
Client ID: PC-16D
Sample Location: 155 S FLINT ROCK RD
Date Collected: 06/12/24 13:00
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.39	1.32	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.39	1.32	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.695	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.735	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.75	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.455	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.423	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.351	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	1.88	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.99	2.64	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	39.9	9.35	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	39.9	6.30	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-13 Date Collected: 06/12/24 13:00

Client ID: PC-16D Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	85		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	84		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	96		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	195		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	83		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	84		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	85		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	81		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	117		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	75		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	63		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	55		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	48		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	82		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	56		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	50		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	75		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	48		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	47		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	78		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	60		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	65		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	63		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	67		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-13 D
Client ID: PC-16D
Sample Location: 155 S FLINT ROCK RD

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 14:20
Analyst: AC

Date Collected: 06/12/24 13:00
Date Received: 06/14/24
Field Prep: Not Specified

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	522		ng/l	7.99	3.63	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	71		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-14
Client ID: PC-16S
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 13:50
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 14:21
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.49	1.04	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.25	0.868	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.62	0.544	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.49	1.70	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.62	0.479	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.62	0.284	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.62	0.325	1
Perfluorohexanesulfonic Acid (PFHxS)	0.722	J	ng/l	1.62	0.390	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.62	0.706	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.49	2.19	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.62	0.438	1
Perfluorononanoic Acid (PFNA)	0.706	J	ng/l	1.62	0.511	1
Perfluorooctanesulfonic Acid (PFOS)	23.9		ng/l	1.62	0.739	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.62	0.657	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.49	2.52	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.62	0.503	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.62	0.885	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.62	0.706	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.62	0.373	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.62	0.438	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.62	0.876	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.62	0.747	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.62	0.609	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.62	0.430	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.49	0.909	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.49	1.02	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.62	0.617	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-14 Date Collected: 06/12/24 13:50

Client ID: PC-16S Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.49	1.34	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.49	1.34	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.62	0.706	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.62	0.747	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.2	3.81	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.2	1.99	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.25	0.463	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.25	0.430	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.25	0.357	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.25	1.92	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.12	2.68	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.6	9.50	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.6	6.40	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-14 Date Collected: 06/12/24 13:50

Client ID: PC-16S Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	84		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	96		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	96		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	134		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	91		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	94		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	90		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	82		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	105		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	91		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	85		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	88		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	69		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	98		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	80		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	68		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	96		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	82		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	72		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	85		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	76		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	79		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	83		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	86		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-15
Client ID: PC-17
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 14:45
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 15:02
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	8.59		ng/l	6.14	0.983	1
Perfluoropentanoic Acid (PFPeA)	27.8		ng/l	3.07	0.822	1
Perfluorobutanesulfonic Acid (PFBS)	3.09		ng/l	1.54	0.514	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.14	1.60	1
Perfluorohexanoic Acid (PFHxA)	26.9		ng/l	1.54	0.453	1
Perfluoropentanesulfonic Acid (PFPeS)	4.25		ng/l	1.54	0.269	1
Perfluoroheptanoic Acid (PFHpA)	19.7		ng/l	1.54	0.307	1
Perfluorohexanesulfonic Acid (PFHxS)	36.2		ng/l	1.54	0.368	1
Perfluorooctanoic Acid (PFOA)	14.7		ng/l	1.54	0.668	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	16.2		ng/l	6.14	2.07	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.39		ng/l	1.54	0.415	1
Perfluorononanoic Acid (PFNA)	13.0		ng/l	1.54	0.484	1
Perfluorooctanesulfonic Acid (PFOS)	118		ng/l	1.54	0.699	1
Perfluorodecanoic Acid (PFDA)	1.03	J	ng/l	1.54	0.622	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	4.89	J	ng/l	6.14	2.39	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.54	0.476	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.54	0.837	1
Perfluoroundecanoic Acid (PFUnA)	3.31		ng/l	1.54	0.668	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.54	0.353	1
Perfluorooctanesulfonamide (PFOSA)	1.29	J	ng/l	1.54	0.415	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.54	0.829	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.54	0.706	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.54	0.576	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.54	0.407	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.14	0.860	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.14	0.967	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.54	0.584	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-15 Date Collected: 06/12/24 14:45

Client ID: PC-17 Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.14	1.27	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.14	1.27	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.54	0.668	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.54	0.706	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.4	3.61	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	1.90	J	ng/l	15.4	1.88	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.07	0.438	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.07	0.407	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.07	0.338	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.07	1.81	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.68	2.53	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	38.4	8.98	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	38.4	6.06	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-15 Date Collected: 06/12/24 14:45

Client ID: PC-17 Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	75		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	84		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	89		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	109		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	76		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	78		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	81		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	68		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	89		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	68		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	55		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	56		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	54		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	108		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	51		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	56		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	85		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	53		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	49		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	76		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	73		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	73		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	71		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	73		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-16
Client ID: PC-26
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 12:50
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 15:15
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	5.58	J	ng/l	5.88	0.942	1
Perfluoropentanoic Acid (PFPeA)	14.3		ng/l	2.94	0.787	1
Perfluorobutanesulfonic Acid (PFBS)	2.25		ng/l	1.47	0.493	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.88	1.54	1
Perfluorohexanoic Acid (PFHxA)	17.6		ng/l	1.47	0.434	1
Perfluoropentanesulfonic Acid (PFPeS)	3.17		ng/l	1.47	0.257	1
Perfluoroheptanoic Acid (PFHpA)	13.3		ng/l	1.47	0.294	1
Perfluorohexanesulfonic Acid (PFHxS)	24.4		ng/l	1.47	0.353	1
Perfluorooctanoic Acid (PFOA)	10.2		ng/l	1.47	0.640	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	4.05	J	ng/l	5.88	1.99	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.90		ng/l	1.47	0.397	1
Perfluorononanoic Acid (PFNA)	18.0		ng/l	1.47	0.463	1
Perfluorooctanesulfonic Acid (PFOS)	199		ng/l	1.47	0.669	1
Perfluorodecanoic Acid (PFDA)	2.60		ng/l	1.47	0.596	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.88	2.29	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.47	0.456	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.47	0.802	1
Perfluoroundecanoic Acid (PFUnA)	5.93		ng/l	1.47	0.640	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.47	0.338	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.47	0.397	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.47	0.794	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.47	0.677	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.47	0.552	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.47	0.390	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.88	0.824	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.88	0.927	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.47	0.559	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-16 Date Collected: 06/12/24 12:50

Client ID: PC-26 Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.88	1.21	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.88	1.21	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.47	0.640	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.47	0.677	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.7	3.46	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.7	1.80	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.94	0.419	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.94	0.390	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.94	0.324	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.94	1.74	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.36	2.43	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.8	8.61	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.8	5.80	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-16 Date Collected: 06/12/24 12:50

Client ID: PC-26 Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	74		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	87		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	82		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	129		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	74		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	79		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	79		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	71		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	95		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	75		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	65		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	84		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	65		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	105		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	69		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	76		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	104		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	71		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	60		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	78		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	90		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	89		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	82		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	88		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-17
Client ID: PC-30
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 16:00
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 15:28
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	32.7		ng/l	6.52	1.04	1
Perfluoropentanoic Acid (PFPeA)	87.5		ng/l	3.26	0.872	1
Perfluorobutanesulfonic Acid (PFBS)	8.80		ng/l	1.63	0.546	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.52	1.70	1
Perfluorohexanoic Acid (PFHxA)	71.6		ng/l	1.63	0.481	1
Perfluoropentanesulfonic Acid (PFPeS)	13.4		ng/l	1.63	0.285	1
Perfluoroheptanoic Acid (PFHpA)	61.0		ng/l	1.63	0.326	1
Perfluorohexanesulfonic Acid (PFHxS)	125		ng/l	1.63	0.391	1
Perfluorooctanoic Acid (PFOA)	44.8		ng/l	1.63	0.709	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	26.9		ng/l	6.52	2.20	1
Perfluoroheptanesulfonic Acid (PFHpS)	4.42		ng/l	1.63	0.440	1
Perfluorononanoic Acid (PFNA)	25.0		ng/l	1.63	0.514	1
Perfluorooctanesulfonic Acid (PFOS)	290		ng/l	1.63	0.742	1
Perfluorodecanoic Acid (PFDA)	6.57		ng/l	1.63	0.660	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	13.2		ng/l	6.52	2.54	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.63	0.505	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.63	0.888	1
Perfluoroundecanoic Acid (PFUnA)	13.7		ng/l	1.63	0.709	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.63	0.375	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.63	0.440	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.63	0.880	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.63	0.750	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.63	0.611	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.63	0.432	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.52	0.913	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.52	1.03	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.63	0.620	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-17 Date Collected: 06/12/24 16:00

Client ID: PC-30 Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.52	1.34	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.52	1.34	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.63	0.709	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.63	0.750	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.3	3.83	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.3	2.00	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.26	0.465	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.26	0.432	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.26	0.359	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.26	1.92	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.15	2.69	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.8	9.54	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.8	6.43	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-17 Date Collected: 06/12/24 16:00

Client ID: PC-30 Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	79		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	91		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	84		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	117		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	82		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	81		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	73		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	102		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	74		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	66		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	75		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	122		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	66		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	62		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	96		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	60		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	52		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	82		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	80		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	88		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	79		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	85		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-18
Client ID: PC-38
Sample Location: 155 S FLINT ROCK RD

Date Collected: 06/12/24 10:20
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/27/24 15:41
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	5.70	0.912	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.85	0.762	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.42	0.477	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.70	1.49	1
Perfluorohexanoic Acid (PFHxA)	0.549	J	ng/l	1.42	0.420	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.42	0.249	1
Perfluoroheptanoic Acid (PFHpA)	0.321	J	ng/l	1.42	0.285	1
Perfluorohexanesulfonic Acid (PFHxS)	1.64		ng/l	1.42	0.342	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.42	0.620	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.70	1.92	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.42	0.385	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.42	0.449	1
Perfluorooctanesulfonic Acid (PFOS)	3.58		ng/l	1.42	0.648	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.42	0.577	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.70	2.22	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.42	0.442	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.42	0.777	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.42	0.620	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.42	0.328	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.42	0.385	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.42	0.770	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.42	0.656	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.42	0.534	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.42	0.378	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.70	0.798	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.70	0.898	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.42	0.542	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-18 Date Collected: 06/12/24 10:20

Client ID: PC-38 Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.70	1.18	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.70	1.18	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.42	0.620	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.42	0.656	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.2	3.35	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.2	1.74	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.85	0.406	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.85	0.378	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.85	0.314	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.85	1.68	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.12	2.35	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	35.6	8.34	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	35.6	5.62	1

Project Name: BARNSTABLE **Lab Number:** L2433695

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433695-18 Date Collected: 06/12/24 10:20

Client ID: PC-38 Date Received: 06/14/24

Sample Location: 155 S FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	65		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	77		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	70		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	68		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	70		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	73		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	71		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	66		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	72		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	65		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	65		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	63		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	54		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	104		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	50		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	65		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	80		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	57		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	49		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	71		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	71		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	86		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	75		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	80		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/27/24 08:00
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-18 Batch: WG1939811-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.40	1.02
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.20	0.856
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.60	0.536
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.40	1.67
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.60	0.472
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.60	0.280
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.60	0.320
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.60	0.384
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.60	0.696
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.40	2.16
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.60	0.432
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.60	0.504
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.60	0.728
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.648
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.40	2.49
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.496
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.872
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.696
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.368
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.432
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.864
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.736
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.600
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.424
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.40	0.896
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.40	1.01
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.608

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/27/24 08:00
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-18 Batch: WG1939811-1					
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.40	1.32
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.40	1.32
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.696
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.736
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.76
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.456
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.424
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.352
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	1.89
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.00	2.64
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.0	9.36
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.0	6.31

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/27/24 08:00
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/26/24 18:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-18 Batch: WG1939811-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	78		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	89		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	81		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	103		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	81		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	82		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	78		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	97		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	87		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	78		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	82		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	68		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	121		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	72		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	67		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	95		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	72		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	63		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	83		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	64		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	73		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	72		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	76		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/29/24 08:10
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 11 Batch: WG1940880-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.40	1.02
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.20	0.856
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.60	0.536
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.40	1.67
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.60	0.472
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.60	0.280
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.60	0.320
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.60	0.384
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.60	0.696
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.40	2.16
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.60	0.432
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.60	0.504
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.60	0.728
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.648
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.40	2.49
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.496
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.872
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.696
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.368
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.432
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.864
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.736
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.600
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.424
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.40	0.896
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.40	1.01
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.608

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/29/24 08:10
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 11 Batch: WG1940880-1					
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.40	1.32
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.40	1.32
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.696
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.736
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.76
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.456
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.424
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.352
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	1.89
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.00	2.64
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.0	9.36
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.0	6.31

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/29/24 08:10
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 11 Batch: WG1940880-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	66		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	70		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	66		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	74		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	61		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	63		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	62		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	62		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	61		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	64		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	60		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	57		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	58		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	55		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	57		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	53		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	56		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	52		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	38		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	65		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	32		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	29		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	51		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	49		10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-18 Batch: WG1939811-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	118		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	127		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	115		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	120		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	132		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	125		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	126		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	122		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	134		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	113		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	126		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	135		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	120		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	118		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	129		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	115		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	84		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	127		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	110		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	114		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	101		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	126		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-18 Batch: WG1939811-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	114		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	130		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	123		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	138		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	117		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	123		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	123		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	127		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	117		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	117		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	115		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	114		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	120		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	134		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	121		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	116		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	113		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	**167**	Q	-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433695

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-18 Batch: WG1939811-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	85				20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	98				20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	85				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	96				20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	88				20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	91				20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	90				20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	82				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	109				20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85				20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	86				20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	85				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	85				20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	129				20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	80				20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	80				20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	102				20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	81				20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	76				20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	88				20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	83				20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	89				20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	81				20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	85				20-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-18 Batch: WG1939811-3								
Perfluorobutanoic Acid (PFBA)	118		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	129		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	120		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	124		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	118		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	123		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	116		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	115		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	122		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	119		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	122		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	114		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	112		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	122		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	112		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	121		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	118		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	124		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	126		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	117		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	108		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	116		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433695

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-18 Batch: WG1939811-3								
Perfluorotridecanoic Acid (PFTrDA)	114		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	125		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	113		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	117		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	122		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	100		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	101		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	115		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	113		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	111		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	111		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	133		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	111		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	109		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	105		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	124		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	102		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	117		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-18 Batch: WG1939811-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	90				20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	96				20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	88				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	95				20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	85				20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87				20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	85				20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	85				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	107				20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	101				20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	89				20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	89				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	92				20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	116				20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	84				20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	86				20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	110				20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	96				20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	78				20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	88				20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	88				20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	101				20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	91				20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	97				20-150

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433695

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 11 Batch: WG1940880-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	109		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	111		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	112		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	115		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	108		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	121		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	111		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	108		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	110		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	119		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	115		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	100		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	122		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	94		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	120		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	106		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	106		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	112		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	106		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	107		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	121		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	106		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433695

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 11 Batch: WG1940880-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	100		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	112		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	105		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	116		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	84		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	120		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	103		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	102		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	108		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	120		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	122		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	115		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	97		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	110		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	120		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	102		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	96		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	77		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433695

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 11 Batch: WG1940880-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	88				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	97				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	91				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	100				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	89				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	89				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	87				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	87				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	87				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	83				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	89				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	84				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	75				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	82				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	79				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	79				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	77				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	62				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	91				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	52				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	51				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	75				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	70				10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 11 Batch: WG1940880-3								
Perfluorobutanoic Acid (PFBA)	84		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	85		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	83		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	82		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	90		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	92		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	86		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	84		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	79		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	89		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	87		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	77		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	85		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	86		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	87		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	87		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	88		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	89		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	82		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	81		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	90		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	89		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 11 Batch: WG1940880-3								
Perfluorotridecanoic Acid (PFTrDA)	84		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	89		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	84		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	91		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	62		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	91		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	80		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	98		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	87		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	96		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	97		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	90		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	78		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	87		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	98		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	85		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	80		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	68		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433695

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 11 Batch: WG1940880-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	86				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	94				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	88				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	97				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	84				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	80				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	84				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	83				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	84				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	77				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	79				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	81				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	72				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	81				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	82				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	71				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	72				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	56				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	88				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	54				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	58				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	75				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	73				10-130

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1939811-4 WG1939811-5 QC Sample: L2433695-04 Client ID: MW-15S												
Perfluorobutanoic Acid (PFBA)	1.96J	70.7	89.4	124		93.0	125		40-150	4		30
Perfluoropentanoic Acid (PFPeA)	4.61	35.4	50.9	131		53.4	134		40-150	5		30
Perfluorobutanesulfonic Acid (PFBS)	0.523J	15.7	20.3	126		21.4	130		40-150	5		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	66.3	78.9	119		83.3	122		40-150	5		30
Perfluorohexanoic Acid (PFHxA)	3.73	17.7	25.0	120		24.9	117		40-150	0		30
Perfluoropentanesulfonic Acid (PFPeS)	0.551J	16.6	21.0	123		23.1	132		40-150	10		30
Perfluoroheptanoic Acid (PFHpA)	3.19	17.7	24.1	118		24.5	117		40-150	2		30
Perfluorohexanesulfonic Acid (PFHxS)	6.59	16.2	26.0	120		26.6	121		40-150	2		30
Perfluorooctanoic Acid (PFOA)	7.22	17.7	29.0	123		30.9	130		40-150	6		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	67.2	86.2	128		88.0	128		40-150	2		30
Perfluoroheptanesulfonic Acid (PFHpS)	0.410J	16.8	24.2	141		26.3	150		40-150	8		30
Perfluorononanoic Acid (PFNA)	0.919J	17.7	20.1	108		21.5	113		40-150	7		30
Perfluorooctanesulfonic Acid (PFOS)	11.9	16.4	30.9	116		35.4	140		40-150	14		30
Perfluorodecanoic Acid (PFDA)	ND	17.7	21.6	122		23.5	129		40-150	8		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	67.9	105	**155**	Q	94.7	136		40-150	10		30
Perfluorononanesulfonic Acid (PFNS)	ND	17	22.7	133		23.7	136		40-150	4		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	17.7	20.4	115		20.0	110		40-150	2		30
Perfluoroundecanoic Acid (PFUnA)	ND	17.7	24.4	138		23.5	129		40-150	4		30
Perfluorodecanesulfonic Acid (PFDS)	ND	17.1	21.7	127		21.0	120		40-150	3		30
Perfluorooctanesulfonamide (PFOSA)	ND	17.7	21.6	122		23.4	129		40-150	8		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	17.7	21.3	120		24.4	134		40-150	14		30
Perfluorododecanoic Acid (PFDoA)	ND	17.7	22.5	127		26.4	145		40-150	16		30

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433695
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1939811-4 WG1939811-5 QC Sample: L2433695-04 Client ID: MW-15S												
Perfluorotridecanoic Acid (PFTrDA)	ND	17.7	23.2	131		25.0	138		40-150	7		30
Perfluorotetradecanoic Acid (PFTeDA)	ND	17.7	24.6	139		23.3	128		40-150	5		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	70.7	83.7	118		86.4	119		40-150	3		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	66.8	85.3	128		83.9	122		40-150	2		30
Perfluorododecanesulfonic Acid (PFDoS)	ND	17.1	22.0	128		24.4	139		40-150	10		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	66.1	75.2	114		67.0	99		40-150	12		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	66.8	76.0	114		62.5	91		40-150	19		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	17.7	22.9	130		22.6	125		40-150	1		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	17.7	22.0	124		21.2	117		40-150	4		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	177	206	117		213	117		40-150	3		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	177	211	119		211	116		40-150	0		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	35.4	50.1	142		51.6	142		40-150	3		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	35.4	41.7	118		44.7	123		40-150	7		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	31.5	35.2	112		35.8	111		40-150	2		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	35.4	38.0	107		40.2	111		40-150	6		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	88.4	113	128		126	139		40-150	11		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	442	460	104		481	106		40-150	4		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	442	603	136		652	144		40-150	8		30

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1939811-4 WG1939811-5 QC Sample: L2433695-04 Client ID: MW-15S

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	79		57		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	115		93		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	101		79		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	88		87		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	108		65		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	81		82		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	76		76		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	112		90		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	77		76		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	83		67		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	71		69		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	74		58		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	85		68		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	68		54		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	74		54		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	83		69		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87		68		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	75		52		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	64		42		20-150
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	84		68		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	88		71		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	77		60		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	83		66		20-150

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433695

Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1939811-4 WG1939811-5 QC Sample: L2433695-04 Client ID: MW-15S												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	81		70		20-150

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2433695-01A	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-01B	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-01C	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-02A	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-02B	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-02C	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-03A	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-03B	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-03C	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-04A	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-04B	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-04C	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-05A	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-05B	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-05C	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-06A	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-06B	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-06C	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-07A	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-07B	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-07C	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-08A	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2433695-08B	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-08C	Plastic 500ml unpreserved	B	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2433695-09A	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-09B	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-09C	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-10A	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-10B	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-10C	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-11A	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-11B	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-11C	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-12A	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-12B	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-12C	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-13A	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-13B	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-13C	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-14A	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-14B	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-14C	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-15A	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-15B	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-15C	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-16A	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-16B	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-16C	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-17A	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-17B	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2433695-17C	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-18A	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-18B	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)
L2433695-18C	Plastic 500ml unpreserved	A	NA		4.1	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

PFAS PARAMETER SUMMARY

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

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433695
Report Date: 08/13/24

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:	BARNSTABLE	**Lab Number:**	L2433695
Project Number:	01.0177641.00	**Report Date:**	08/13/24

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

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

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

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

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

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

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

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

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2433695
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2433695
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

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

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

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

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

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

REFERENCES

144 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. Draft EPA Method 1633, EPA Document 821-D-22-001, June 2022.

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

Mansfield Facility
SM 2540D: TSS.
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.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

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

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, 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 2

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 6/17/24

ALPHA Job #: L2433695

Client Information

Client: GZA GeoEnvironmental, Inc.
Address: 249 Vanderbilt Ave
Norwood, MA 02062
Phone: 781-589-3866
Email: flora.ju@gza.com
roman.thompson@gza.com
jennifer.mckechnie@gza.com

Additional Project Information:

Project Information

Project Name: Bainstable
Project Location: 155 S Flint Rock Rd
Project #: 01.0177641.00
Project Manager: Jennifer McKechnie
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due:

Report Information - Data Deliverables

☐ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☒ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☒ 8260 ☐ 624	SVOC: ☐ 524.2 ☐ ABN	METALS: ☐ PAH ☐ MCP 13	METALS: ☐ MCP 14 ☐ RCRA5	EPH: ☐ RCP 15 ☐ RCRA8 ☐ Ranges & Targets	VPH: ☐ PP13 ☐ Ranges Only ☐ Ranges & Targets	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint ☐ Ranges Only	PFAS: EPA 1633	Sample Comments	TOTAL # BOTTLES
33695-01	MW-12I	06/12/24	1345	GW	KC									X		3
-02	MW-12D	06/12/24	1440	GW	KC									X		3
-03	MW-12S	06/12/24	1545	GW	KC									X		3
-04	MW-15S	06/12/24	1245	GW	NCL									X		3
-05	MW-15D	06/12/24	1145	GW	NCL									X		3
-06	MW-19A	06/12/24	1115	GW	KC									X		3
-07	MW-19B	06/12/24	1225	GW	KC									X		3
-08	MW-22	06/12/24	1540	GW	NCL									X		3
-09	MW-23	06/12/24	1440	GW	NCL									X		3
-10	PC-1	06/12/24	1510	GW	OLB									X		3
	Container Type					V				A	V			P		
	Preservative					B				B	B			A		

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H= $Na_2S_2O_3$
I= Ascorbic Acid
J= NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Flora Ju	06/14/24 1247		6/14 12:47
	6/14 1751		6/14 1751
	6/17/24 1525		6/17/24 1525
	6/17/24 1640		

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

Serial_No:08132420:17

CHAIN OF CUSTODY

PAGE 2 OF 2

ALPHA ANALYTICAL

8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 6/17/24

ALPHA Job #: L2433695

Client Information

Client: GZA GeoEnvironmental Inc.
Address: 249 Vanderbilt Ave, Norwood, MA 02062
Phone: 781-589-3866
Email: jennifer.mckechnie@gza.com, flora.su@gza.com, rowan.thompson@gza.com

Additional Project Information:

Project Information

Project Name: Barnstable
Project Location: 155 S Flint Rock Rd
Project #: 01.0177624.00
Project Manager: Jennifer McKechnie
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)

Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☒ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program Criteria

ANALYSIS

VOC: ☒ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☒ Ranges & Targets ☐ Ranges Only (SIM); VPH: ☐ Ranges & Targets ☒ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint; PFAS: EPA 1633

SAMPLE INFO — Filtration: ☐ Field ☐ Lab to do; Preservation: ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	PFAS: EPA 1633	Sample Comments	Total # Bottles
33695-11	PC-11	06/12/24	1135	GW	VER	X		3
-12	PC-13	06/12/24	1635	GW	OLB	X		3
-13	PC-16D	06/12/24	1300	GW	VER	X		3
-14	PC-16S	06/12/24	1350	GW	VER	X		3
-15	PC-17	06/12/24	1445	GW	VER	X		3
-16	PC-26	06/12/24	1250	GW	OLB	X		3
-17	PC-30	06/12/24	1600	GW	VER	X		3
-18	PC-38	06/12/24	1020	GW	OLB	X		3

	VOC	EPH	VPH	PFAS
Container Type	V	A	V	P
Preservative	B	B	B	A

Container Type: P= Plastic, A= Amber glass, V= Vial, G= Glass, B= Bacteria cup, C= Cube, O= Other, E= Encore, D= BOD Bottle

Preservative: A= None, B= HCl, C= HNO_3, D= H_2SO_4, E= NaOH, F= MeOH, G= $NaHSO_4$, H = $Na_2S_2O_3$, I= Ascorbic Acid, J = NH_4Cl, K= Zn Acetate, O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Flora Su	06/14/24 1247	[signature] AAL	6/14 12:47
[signature] AAL	6/14 17:51	[signature]	6/14 17:51
[signature]	6/17/24 1725	[signature]	6/17/24 17:25
	6/17/24 [illegible]	[illegible]	6/17/24 [illegible]

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L2433699
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Jennifer McKechnie
Phone:	(781) 278-3864
Project Name:	BARNSTABLE
Project Number:	01.0177641.00
Report Date:	08/13/24

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0825), DoD (L2474), FL (E87814), IL (200081), IN (C-MA-04), KY (KY98046), LA (85084), ME (MA00030), MD (350), MI (9110), MN (025-999-495), NJ (MA015), NY (11627), NC (685), OR (MA-0262), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #525-23-107-88708A1), USFWS (Permit #A24920).

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433699
Report Date: 08/13/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2433699-01	MW-35S	WATER	155 S. FLINT ROCK RD	06/13/24 10:45	06/14/24
L2433699-02	MW-35I	WATER	155 S. FLINT ROCK RD	06/13/24 12:00	06/14/24
L2433699-03	MW-35D	WATER	155 S. FLINT ROCK RD	06/13/24 10:10	06/14/24
L2433699-04	PC-10	WATER	155 S. FLINT ROCK RD	06/13/24 15:45	06/14/24
L2433699-05	PC-14	WATER	155 S. FLINT ROCK RD	06/13/24 15:00	06/14/24
L2433699-06	PC-21S	WATER	155 S. FLINT ROCK RD	06/13/24 15:05	06/14/24
L2433699-07	PC-21D	WATER	155 S. FLINT ROCK RD	06/13/24 16:25	06/14/24
L2433699-08	PC-28	WATER	155 S. FLINT ROCK RD	06/13/24 13:30	06/14/24
L2433699-09	PC-29	WATER	155 S. FLINT ROCK RD	06/13/24 12:30	06/14/24

Project Name:	BARNSTABLE	**Lab Number:**	L2433699
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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:	BARNSTABLE	**Lab Number:**	L2433699
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Case Narrative (continued)

Report Revision

August 13, 2024: At the client's request, all non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

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: Kelly Stenstrom

Title: Technical Director/Representative Date: 08/13/24

ORGANICS

SEMIVOLATILES

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433699
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-01
Client ID: MW-35S
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/13/24 10:45
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/29/24 09:39
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	5.01	J	ng/l	6.09	0.974	1
Perfluoropentanoic Acid (PFPeA)	14.4		ng/l	3.04	0.814	1
Perfluorobutanesulfonic Acid (PFBS)	1.74		ng/l	1.52	0.510	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.09	1.59	1
Perfluorohexanoic Acid (PFHxA)	11.8		ng/l	1.52	0.449	1
Perfluoropentanesulfonic Acid (PFPeS)	2.15		ng/l	1.52	0.266	1
Perfluoroheptanoic Acid (PFHpA)	9.07		ng/l	1.52	0.304	1
Perfluorohexanesulfonic Acid (PFHxS)	25.8		ng/l	1.52	0.365	1
Perfluorooctanoic Acid (PFOA)	8.15		ng/l	1.52	0.662	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.09	2.06	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.08	J	ng/l	1.52	0.411	1
Perfluorononanoic Acid (PFNA)	2.72		ng/l	1.52	0.480	1
Perfluorooctanesulfonic Acid (PFOS)	43.1		ng/l	1.52	0.693	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.52	0.616	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.09	2.37	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.52	0.472	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.52	0.830	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.52	0.662	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.52	0.350	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.52	0.411	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.52	0.822	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.52	0.700	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.52	0.571	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.52	0.403	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.09	0.852	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.09	0.959	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.52	0.578	1

Project Name: BARNSTABLE **Lab Number:** L2433699

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-01 Date Collected: 06/13/24 10:45

Client ID: MW-35S Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.09	1.26	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.09	1.26	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.52	0.662	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.52	0.700	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.2	3.58	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.2	1.86	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.04	0.434	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.04	0.403	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.04	0.335	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.04	1.80	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.61	2.51	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	38.0	8.90	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	38.0	6.00	1

Project Name: BARNSTABLE **Lab Number:** L2433699

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-01 Date Collected: 06/13/24 10:45

Client ID: MW-35S Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	91		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	95		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	91		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	131		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	89		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	89		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	87		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	85		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	90		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	84		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	84		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	78		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	90		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	76		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	75		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	79		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	77		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	68		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	57		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	87		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	59		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	60		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	73		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	68		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433699
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-02
Client ID: MW-35I
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/13/24 12:00
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/29/24 10:17
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.17	J	ng/l	5.87	0.940	1
Perfluoropentanoic Acid (PFPeA)	5.81		ng/l	2.94	0.786	1
Perfluorobutanesulfonic Acid (PFBS)	0.734	J	ng/l	1.47	0.492	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.87	1.53	1
Perfluorohexanoic Acid (PFHxA)	5.94		ng/l	1.47	0.433	1
Perfluoropentanesulfonic Acid (PFPeS)	0.874	J	ng/l	1.47	0.257	1
Perfluoroheptanoic Acid (PFHpA)	4.18		ng/l	1.47	0.294	1
Perfluorohexanesulfonic Acid (PFHxS)	6.84		ng/l	1.47	0.352	1
Perfluorooctanoic Acid (PFOA)	2.63		ng/l	1.47	0.639	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.87	1.98	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.47	0.396	1
Perfluorononanoic Acid (PFNA)	1.52		ng/l	1.47	0.462	1
Perfluorooctanesulfonic Acid (PFOS)	20.7		ng/l	1.47	0.668	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.47	0.595	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.87	2.28	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.47	0.455	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.47	0.800	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.47	0.639	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.47	0.338	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.47	0.396	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.47	0.793	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.47	0.675	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.47	0.551	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.47	0.389	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.87	0.822	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.87	0.925	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.47	0.558	1

Project Name: BARNSTABLE **Lab Number:** L2433699

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-02 Date Collected: 06/13/24 12:00

Client ID: MW-35I Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.87	1.21	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.87	1.21	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.47	0.639	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.47	0.675	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.7	3.45	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.7	1.80	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.94	0.418	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.94	0.389	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.94	0.323	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.94	1.73	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.34	2.42	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.7	8.59	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.7	5.79	1

Project Name: BARNSTABLE **Lab Number:** L2433699

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-02 Date Collected: 06/13/24 12:00

Client ID: MW-35I Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	89		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	97		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	93		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	122		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	91		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	91		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	86		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	85		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	92		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	81		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	88		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	81		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	92		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	78		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	79		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	88		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	78		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	72		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	56		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	86		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	70		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	72		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	77		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	75		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433699
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-03
Client ID: MW-35D
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/13/24 10:10
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/29/24 10:30
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	6.31		ng/l	6.01	0.962	1
Perfluoropentanoic Acid (PFPeA)	24.9		ng/l	3.00	0.804	1
Perfluorobutanesulfonic Acid (PFBS)	6.56		ng/l	1.50	0.503	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.01	1.57	1
Perfluorohexanoic Acid (PFHxA)	27.8		ng/l	1.50	0.443	1
Perfluoropentanesulfonic Acid (PFPeS)	8.42		ng/l	1.50	0.263	1
Perfluoroheptanoic Acid (PFHpA)	11.3		ng/l	1.50	0.300	1
Perfluorohexanesulfonic Acid (PFHxS)	74.5		ng/l	1.50	0.360	1
Perfluorooctanoic Acid (PFOA)	5.26		ng/l	1.50	0.654	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.01	2.03	1
Perfluoroheptanesulfonic Acid (PFHpS)	3.16		ng/l	1.50	0.406	1
Perfluorononanoic Acid (PFNA)	5.01		ng/l	1.50	0.473	1
Perfluorooctanesulfonic Acid (PFOS)	135		ng/l	1.50	0.684	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.50	0.608	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.01	2.34	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.50	0.466	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.50	0.819	1
Perfluoroundecanoic Acid (PFUnA)	1.26	J	ng/l	1.50	0.654	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.50	0.346	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.50	0.406	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.50	0.811	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.50	0.691	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.50	0.563	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.50	0.398	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.01	0.841	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.01	0.946	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.50	0.571	1

Project Name: BARNSTABLE **Lab Number:** L2433699

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-03 Date Collected: 06/13/24 10:10

Client ID: MW-35D Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.01	1.24	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.01	1.24	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.50	0.654	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.50	0.691	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.0	3.53	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.0	1.84	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.00	0.428	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.00	0.398	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.00	0.330	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.00	1.77	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.51	2.48	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.6	8.79	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.6	5.93	1

Project Name: BARNSTABLE **Lab Number:** L2433699

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-03 Date Collected: 06/13/24 10:10

Client ID: MW-35D Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	92		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	99		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	98		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	179		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	91		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	93		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	92		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	88		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	102		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	88		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	84		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	76		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	118		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	76		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	72		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	81		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	77		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	68		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	51		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	88		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	60		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	61		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	75		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	70		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433699
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-04
Client ID: PC-10
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/13/24 15:45
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/29/24 10:43
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	20.9		ng/l	5.96	0.954	1
Perfluoropentanoic Acid (PFPeA)	64.4		ng/l	2.98	0.798	1
Perfluorobutanesulfonic Acid (PFBS)	6.48		ng/l	1.49	0.499	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.96	1.56	1
Perfluorohexanoic Acid (PFHxA)	58.7		ng/l	1.49	0.440	1
Perfluoropentanesulfonic Acid (PFPeS)	8.95		ng/l	1.49	0.261	1
Perfluoroheptanoic Acid (PFHpA)	28.0		ng/l	1.49	0.298	1
Perfluorohexanesulfonic Acid (PFHxS)	75.8		ng/l	1.49	0.358	1
Perfluorooctanoic Acid (PFOA)	20.5		ng/l	1.49	0.648	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	31.6		ng/l	5.96	2.01	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.21		ng/l	1.49	0.402	1
Perfluorononanoic Acid (PFNA)	15.2		ng/l	1.49	0.470	1
Perfluorooctanesulfonic Acid (PFOS)	182		ng/l	1.49	0.678	1
Perfluorodecanoic Acid (PFDA)	2.04		ng/l	1.49	0.604	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	5.92	J	ng/l	5.96	2.32	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.49	0.462	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.49	0.812	1
Perfluoroundecanoic Acid (PFUnA)	16.4		ng/l	1.49	0.648	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.49	0.343	1
Perfluorooctanesulfonamide (PFOSA)	6.98		ng/l	1.49	0.402	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.49	0.805	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.49	0.686	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.49	0.559	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.49	0.395	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.96	0.835	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.96	0.939	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.49	0.566	1

Project Name: BARNSTABLE **Lab Number:** L2433699

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-04 Date Collected: 06/13/24 15:45

Client ID: PC-10 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.96	1.23	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.96	1.23	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.49	0.648	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.49	0.686	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.9	3.50	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.9	1.83	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.98	0.425	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.98	0.395	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.98	0.328	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.98	1.76	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.45	2.46	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.3	8.72	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.3	5.88	1

Project Name: BARNSTABLE **Lab Number:** L2433699

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-04 Date Collected: 06/13/24 15:45

Client ID: PC-10 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	91		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	91		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	92		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	161		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	87		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	94		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	91		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	89		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	98		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	84		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	92		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	81		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	104		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	77		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	77		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	86		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	90		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	71		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	65		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	89		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	65		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	67		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	80		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	78		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433699
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-05
Client ID: PC-14
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/13/24 15:00
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/29/24 10:56
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	15.7		ng/l	5.96	0.953	1
Perfluoropentanoic Acid (PFPeA)	50.3		ng/l	2.98	0.797	1
Perfluorobutanesulfonic Acid (PFBS)	5.94		ng/l	1.49	0.499	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.96	1.56	1
Perfluorohexanoic Acid (PFHxA)	47.0		ng/l	1.49	0.439	1
Perfluoropentanesulfonic Acid (PFPeS)	7.71		ng/l	1.49	0.261	1
Perfluoroheptanoic Acid (PFHpA)	26.8		ng/l	1.49	0.298	1
Perfluorohexanesulfonic Acid (PFHxS)	59.7		ng/l	1.49	0.357	1
Perfluorooctanoic Acid (PFOA)	18.6		ng/l	1.49	0.648	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	33.5		ng/l	5.96	2.01	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.77		ng/l	1.49	0.402	1
Perfluorononanoic Acid (PFNA)	24.7		ng/l	1.49	0.469	1
Perfluorooctanesulfonic Acid (PFOS)	234		ng/l	1.49	0.678	1
Perfluorodecanoic Acid (PFDA)	3.30		ng/l	1.49	0.603	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	6.99		ng/l	5.96	2.32	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.49	0.462	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.49	0.812	1
Perfluoroundecanoic Acid (PFUnA)	14.4		ng/l	1.49	0.648	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.49	0.342	1
Perfluorooctanesulfonamide (PFOSA)	6.23		ng/l	1.49	0.402	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.49	0.804	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.49	0.685	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.49	0.558	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.49	0.395	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.96	0.834	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.96	0.938	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.49	0.566	1

Project Name: BARNSTABLE **Lab Number:** L2433699

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-05 Date Collected: 06/13/24 15:00

Client ID: PC-14 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.96	1.23	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.96	1.23	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.49	0.648	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.49	0.685	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.9	3.50	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.9	1.82	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.98	0.424	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.98	0.395	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.98	0.328	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.98	1.76	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.45	2.46	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.2	8.71	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.2	5.88	1

Project Name: BARNSTABLE **Lab Number:** L2433699

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-05 Date Collected: 06/13/24 15:00

Client ID: PC-14 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	77		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	78		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	77		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	150		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	77		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	81		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	74		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	74		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	85		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	76		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	81		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	83		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	104		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	71		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	76		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	88		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	79		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	77		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	62		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	80		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	68		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	67		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	78		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	75		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433699
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-06
Client ID: PC-21S
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/13/24 15:05
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/29/24 11:08
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.34	J	ng/l	6.02	0.963	1
Perfluoropentanoic Acid (PFPeA)	4.07		ng/l	3.01	0.805	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.50	0.504	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.02	1.57	1
Perfluorohexanoic Acid (PFHxA)	3.26		ng/l	1.50	0.444	1
Perfluoropentanesulfonic Acid (PFPeS)	1.23	J	ng/l	1.50	0.263	1
Perfluoroheptanoic Acid (PFHpA)	3.20		ng/l	1.50	0.301	1
Perfluorohexanesulfonic Acid (PFHxS)	18.4		ng/l	1.50	0.361	1
Perfluorooctanoic Acid (PFOA)	4.36		ng/l	1.50	0.655	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.02	2.03	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.542	J	ng/l	1.50	0.406	1
Perfluorononanoic Acid (PFNA)	0.527	J	ng/l	1.50	0.474	1
Perfluorooctanesulfonic Acid (PFOS)	9.77		ng/l	1.50	0.685	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.50	0.610	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.02	2.34	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.50	0.466	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.50	0.820	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.50	0.655	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.50	0.346	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.50	0.406	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.50	0.813	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.50	0.692	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.50	0.564	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.50	0.399	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.02	0.843	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.02	0.948	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.50	0.572	1

Project Name: BARNSTABLE **Lab Number:** L2433699

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-06 Date Collected: 06/13/24 15:05

Client ID: PC-21S Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.02	1.24	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.02	1.24	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.50	0.655	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.50	0.692	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.0	3.54	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.0	1.84	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.01	0.429	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.01	0.399	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.01	0.331	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.01	1.78	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.52	2.48	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.6	8.80	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.6	5.94	1

Project Name: BARNSTABLE **Lab Number:** L2433699

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-06 Date Collected: 06/13/24 15:05

Client ID: PC-21S Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	90		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	93		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	90		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	160		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	88		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	91		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	88		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	88		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	100		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	91		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	92		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	84		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	112		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	90		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	83		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	91		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	97		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	78		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	65		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	85		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	63		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	66		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	89		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	84		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433699
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-07
Client ID: PC-21D
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/13/24 16:25
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/29/24 11:48
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.57	J	ng/l	5.86	0.938	1
Perfluoropentanoic Acid (PFPeA)	7.62		ng/l	2.93	0.784	1
Perfluorobutanesulfonic Acid (PFBS)	1.68		ng/l	1.46	0.491	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.86	1.53	1
Perfluorohexanoic Acid (PFHxA)	8.35		ng/l	1.46	0.432	1
Perfluoropentanesulfonic Acid (PFPeS)	1.77		ng/l	1.46	0.256	1
Perfluoroheptanoic Acid (PFHpA)	5.14		ng/l	1.46	0.293	1
Perfluorohexanesulfonic Acid (PFHxS)	13.4		ng/l	1.46	0.352	1
Perfluorooctanoic Acid (PFOA)	3.63		ng/l	1.46	0.637	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.86	1.98	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.46	0.396	1
Perfluorononanoic Acid (PFNA)	3.58		ng/l	1.46	0.462	1
Perfluorooctanesulfonic Acid (PFOS)	20.5		ng/l	1.46	0.667	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.46	0.593	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.86	2.28	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.46	0.454	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.46	0.799	1
Perfluoroundecanoic Acid (PFUnA)	2.06		ng/l	1.46	0.637	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.46	0.337	1
Perfluorooctanesulfonamide (PFOSA)	1.34	J	ng/l	1.46	0.396	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.46	0.791	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.46	0.674	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.46	0.550	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.46	0.388	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.86	0.821	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.86	0.923	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.46	0.557	1

Project Name: BARNSTABLE **Lab Number:** L2433699

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-07 Date Collected: 06/13/24 16:25

Client ID: PC-21D Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.86	1.21	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.86	1.21	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.46	0.637	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.46	0.674	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.6	3.44	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.6	1.80	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.93	0.418	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.93	0.388	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.93	0.322	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.93	1.73	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.33	2.42	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.6	8.57	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.6	5.78	1

Project Name: BARNSTABLE **Lab Number:** L2433699

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-07 Date Collected: 06/13/24 16:25

Client ID: PC-21D Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	91		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	98		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	94		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	132		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	92		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	95		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	89		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	88		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	98		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	88		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	87		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	89		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	99		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	83		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	84		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	83		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	85		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	78		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	67		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	89		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	65		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	63		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	80		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	76		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433699
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-08
Client ID: PC-28
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/13/24 13:30
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/29/24 12:00
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	10.9		ng/l	6.01	0.962	1
Perfluoropentanoic Acid (PFPeA)	33.6		ng/l	3.00	0.804	1
Perfluorobutanesulfonic Acid (PFBS)	3.52		ng/l	1.50	0.503	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.01	1.57	1
Perfluorohexanoic Acid (PFHxA)	28.9		ng/l	1.50	0.443	1
Perfluoropentanesulfonic Acid (PFPeS)	5.72		ng/l	1.50	0.263	1
Perfluoroheptanoic Acid (PFHpA)	26.8		ng/l	1.50	0.300	1
Perfluorohexanesulfonic Acid (PFHxS)	54.4		ng/l	1.50	0.361	1
Perfluorooctanoic Acid (PFOA)	13.4		ng/l	1.50	0.654	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	9.11		ng/l	6.01	2.03	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.44		ng/l	1.50	0.406	1
Perfluorononanoic Acid (PFNA)	27.7		ng/l	1.50	0.473	1
Perfluorooctanesulfonic Acid (PFOS)	341		ng/l	1.50	0.684	1
Perfluorodecanoic Acid (PFDA)	6.75		ng/l	1.50	0.608	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	4.91	J	ng/l	6.01	2.34	1
Perfluorononanesulfonic Acid (PFNS)	0.601	J	ng/l	1.50	0.466	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.50	0.819	1
Perfluoroundecanoic Acid (PFUnA)	29.9		ng/l	1.50	0.654	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.50	0.346	1
Perfluorooctanesulfonamide (PFOSA)	2.96		ng/l	1.50	0.406	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.50	0.811	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.50	0.691	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.50	0.563	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.50	0.398	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.01	0.841	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.01	0.947	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.50	0.571	1

Project Name: BARNSTABLE **Lab Number:** L2433699

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-08 Date Collected: 06/13/24 13:30

Client ID: PC-28 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.01	1.24	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.01	1.24	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.50	0.654	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.50	0.691	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.0	3.53	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.0	1.84	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.00	0.428	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.00	0.398	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.00	0.330	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.00	1.77	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.51	2.48	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.6	8.79	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.6	5.93	1

Project Name: BARNSTABLE **Lab Number:** L2433699

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-08 Date Collected: 06/13/24 13:30

Client ID: PC-28 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	91		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	88		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	91		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	143		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	85		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	89		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	88		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	86		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	99		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	79		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	92		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	81		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	97		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	87		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	77		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	98		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	101		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	72		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	64		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	82		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	78		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	80		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	92		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	92		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433699
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-09
Client ID: PC-29
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/13/24 12:30
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/29/24 12:13
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.12	J	ng/l	5.80	0.929	1
Perfluoropentanoic Acid (PFPeA)	6.04		ng/l	2.90	0.776	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.45	0.486	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.80	1.52	1
Perfluorohexanoic Acid (PFHxA)	3.62		ng/l	1.45	0.428	1
Perfluoropentanesulfonic Acid (PFPeS)	0.276	J	ng/l	1.45	0.254	1
Perfluoroheptanoic Acid (PFHpA)	1.44	J	ng/l	1.45	0.290	1
Perfluorohexanesulfonic Acid (PFHxS)	1.98		ng/l	1.45	0.348	1
Perfluorooctanoic Acid (PFOA)	1.76		ng/l	1.45	0.631	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.80	1.96	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.45	0.392	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.45	0.457	1
Perfluorooctanesulfonic Acid (PFOS)	1.38	J	ng/l	1.45	0.660	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.45	0.588	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.80	2.26	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.45	0.450	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.45	0.791	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.45	0.631	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.45	0.334	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.45	0.392	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.45	0.784	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.45	0.668	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.45	0.544	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.45	0.384	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.80	0.813	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.80	0.914	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.45	0.551	1

Project Name: BARNSTABLE **Lab Number:** L2433699

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-09 Date Collected: 06/13/24 12:30

Client ID: PC-29 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.80	1.20	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.80	1.20	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.45	0.631	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.45	0.668	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.5	3.41	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.5	1.78	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.90	0.414	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.90	0.384	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.90	0.319	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.90	1.71	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.26	2.39	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.3	8.49	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.3	5.72	1

Project Name: BARNSTABLE **Lab Number:** L2433699

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433699-09 Date Collected: 06/13/24 12:30

Client ID: PC-29 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	78		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	76		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	79		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	149		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	75		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	76		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	75		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	73		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	82		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	79		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	75		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	72		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	96		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	69		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	69		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	80		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	79		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	68		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	56		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	75		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	61		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	61		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	74		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	72		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433699
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/29/24 08:10
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-09 Batch: WG1940880-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.40	1.02
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.20	0.856
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.60	0.536
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.40	1.67
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.60	0.472
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.60	0.280
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.60	0.320
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.60	0.384
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.60	0.696
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.40	2.16
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.60	0.432
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.60	0.504
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.60	0.728
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.648
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.40	2.49
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.496
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.872
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.696
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.368
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.432
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.864
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.736
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.600
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.424
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.40	0.896
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.40	1.01
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.608

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433699
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/29/24 08:10
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-09 Batch: WG1940880-1					
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.40	1.32
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.40	1.32
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.696
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.736
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.76
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.456
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.424
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.352
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	1.89
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.00	2.64
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.0	9.36
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.0	6.31

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433699
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/29/24 08:10
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-09 Batch: WG1940880-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	66		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	70		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	66		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	74		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	61		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	63		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	62		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	62		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	61		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	64		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	60		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	57		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	58		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	55		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	57		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	53		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	56		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	52		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	38		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	65		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	32		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	29		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	51		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	49		10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433699
Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-09 Batch: WG1940880-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	109		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	111		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	112		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	115		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	108		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	121		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	111		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	108		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	110		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	119		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	115		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	100		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	122		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	94		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	120		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	106		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	106		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	112		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	106		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	107		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	121		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	106		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433699

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-09 Batch: WG1940880-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	100		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	112		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	105		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	116		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	84		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	120		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	103		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	102		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	108		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	120		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	122		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	115		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	97		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	110		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	120		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	102		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	96		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	77		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433699
Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-09 Batch: WG1940880-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	88				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	97				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	91				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	100				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	89				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	89				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	87				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	87				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	87				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	83				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	89				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	84				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	75				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	82				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	79				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	79				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	77				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	62				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	91				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	52				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	51				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	75				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	70				10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433699
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-09 Batch: WG1940880-3								
Perfluorobutanoic Acid (PFBA)	84		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	85		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	83		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	82		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	90		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	92		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	86		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	84		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	79		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	89		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	87		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	77		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	85		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	86		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	87		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	87		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	88		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	89		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	82		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	81		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	90		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	89		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433699
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-09 Batch: WG1940880-3								
Perfluorotridecanoic Acid (PFTrDA)	84		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	89		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	84		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	91		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	62		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	91		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	80		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	98		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	87		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	96		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	97		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	90		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	78		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	87		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	98		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	85		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	80		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	68		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433699

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-09 Batch: WG1940880-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	86				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	94				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	88				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	97				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	84				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	80				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	84				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	83				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	84				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	77				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	79				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	81				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	72				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	81				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	82				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	71				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	72				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	56				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	88				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	54				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	58				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	75				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	73				10-130

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433699
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG1940880-4 WG1940880-5 QC Sample: L2433699-01 Client ID: MW-35S												
Perfluorobutanoic Acid (PFBA)	5.01J	76	83.5	103		80.3	102		40-150	4		30
Perfluoropentanoic Acid (PFPeA)	14.4	38	54.4	105		52.9	104		40-150	3		30
Perfluorobutanesulfonic Acid (PFBS)	1.74	16.8	19.1	103		19.8	110		40-150	4		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	71.3	75.8	106		72.3	104		40-150	5		30
Perfluorohexanoic Acid (PFHxA)	11.8	19	32.9	111		32.5	112		40-150	1		30
Perfluoropentanesulfonic Acid (PFPeS)	2.15	17.9	22.6	114		21.1	109		40-150	7		30
Perfluoroheptanoic Acid (PFHpA)	9.07	19	28.0	100		28.2	104		40-150	1		30
Perfluorohexanesulfonic Acid (PFHxS)	25.8	17.4	43.6	102		41.4	92		40-150	5		30
Perfluorooctanoic Acid (PFOA)	8.15	19	26.5	97		26.3	98		40-150	1		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	72.2	76.8	106		76.6	109		40-150	0		30
Perfluoroheptanesulfonic Acid (PFHpS)	1.08J	18.1	20.0	104		20.6	111		40-150	3		30
Perfluorononanoic Acid (PFNA)	2.72	19	20.4	93		21.0	99		40-150	3		30
Perfluorooctanesulfonic Acid (PFOS)	43.1	17.6	60.0	96		60.0	99		40-150	0		30
Perfluorodecanoic Acid (PFDA)	ND	19	19.8	104		19.2	104		40-150	3		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	73	83.8	115		80.2	113		40-150	4		30
Perfluorononanesulfonic Acid (PFNS)	ND	18.3	16.6	91		17.0	96		40-150	2		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	19	21.7	114		18.9	102		40-150	14		30
Perfluoroundecanoic Acid (PFUnA)	ND	19	20.7	109		19.2	104		40-150	8		30
Perfluorodecanesulfonic Acid (PFDS)	ND	18.3	16.2	88		15.8	89		40-150	2		30
Perfluorooctanesulfonamide (PFOSA)	ND	19	20.4	107		19.9	108		40-150	2		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	19	19.6	103		20.0	108		40-150	2		30
Perfluorododecanoic Acid (PFDoA)	ND	19	20.6	108		18.7	101		40-150	10		30

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433699
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG1940880-4 WG1940880-5 QC Sample: L2433699-01 Client ID: MW-35S												
Perfluorotridecanoic Acid (PFTrDA)	ND	19	19.4	102		18.0	98		40-150	7		30
Perfluorotetradecanoic Acid (PFTeDA)	ND	19	21.5	113		19.8	107		40-150	8		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	76	75.7	100		74.7	101		40-150	1		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	71.8	81.0	113		78.8	113		40-150	3		30
Perfluorododecanesulfonic Acid (PFDoS)	ND	18.4	13.4	73		12.1	68		40-150	10		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	71.1	76.5	108		70.0	101		40-150	9		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	71.8	62.2	87		60.6	87		40-150	3		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	19	23.8	125		21.8	118		40-150	9		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	19	21.6	114		20.6	112		40-150	5		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	190	223	117		217	118		40-150	3		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	190	222	117		224	121		40-150	1		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	38	45.0	118		42.8	116		40-150	5		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	38	35.7	94		34.9	95		40-150	2		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	33.8	38.8	115		35.0	107		40-150	10		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	38	46.2	122		39.7	108		40-150	15		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	95	105	111		96.5	105		40-150	8		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	475	491	103		461	100		40-150	6		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	475	446	94		449	97		40-150	1		30

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433699
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG1940880-4 WG1940880-5 QC Sample: L2433699-01 Client ID: MW-35S

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	87		82		10-213
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	118		122		10-290
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	94		90		10-261
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	58		68		11-97
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	71		69		10-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	69		70		10-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	56		68		11-94
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	67		72		10-172
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	73		72		10-137
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	84		86		46-115
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	79		77		14-108
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	83		79		32-114
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	89		90		41-125
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	74		70		16-123
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	77		72		28-115
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	82		88		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	89		90		27-156
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	68		64		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	53		50		10-145
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	89		89		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	90		94		29-123
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	85		83		39-121
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	82		80		38-114

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433699

Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG1940880-4 WG1940880-5 QC Sample: L2433699-01 Client ID: MW-35S												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	87		88		35-142

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433699
Report Date: 08/13/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2433699-01A	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-01B	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-01C	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-02A	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-02B	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-02C	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-03A	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-03B	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-03C	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-04A	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-04B	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-04C	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-05A	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-05B	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-05C	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-06A	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-06B	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-06C	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-07A	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-07B	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-07C	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-08A	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-08B	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433699
Report Date: 08/13/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2433699-08C	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-09A	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-09B	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)
L2433699-09C	Plastic 500ml unpreserved	A	NA		5.8	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433699
Report Date: 08/13/24

PFAS PARAMETER SUMMARY

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

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433699
Report Date: 08/13/24

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:	BARNSTABLE	**Lab Number:**	L2433699
Project Number:	01.0177641.00	**Report Date:**	08/13/24

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

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

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

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

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

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

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

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

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2433699
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2433699
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

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

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

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

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

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

REFERENCES

144 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. Draft EPA Method 1633, EPA Document 821-D-22-001, June 2022.

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

Mansfield Facility
SM 2540D: TSS.
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.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

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

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, 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: 6/17/24

ALPHA Job #: L2433699

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: GZA GeoEnvironmental, Inc.
Address: 249 Vanderbilt Avenue, Norwood, MA 02062
Phone: 781-589-3866
Email: Jennifer.McKechnie@gza.com; Bowan.Thompson@gza.com; Flora.Su@gza.com

Additional Project Information:

Project Information

Project Name: Barnstable
Project Location: 155 S. Flint Rock Rd
Project #: 01.0177641.00
Project Manager: Jennifer McKechnie
ALPHA Quote #: 27478

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☒ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	PFAS: EPA 1633	Sample Comments	TOTAL # BOTTLES
33699-01	MW-35S	6/13/24	10:45	GW	ARM	X		3
-02	MW-35I		12:00		NCL	X		3
-03	MW-35D		10:10		NCL	X		3
-04	PC-10		15:45		ARM	X		3
-05	PC-14		15:00		ARM	X		3
-06	PC-21S		15:05		NCL	X		3
-07	PC-21D		16:25		NCL	X		3
-08	PC-28		13:30		ARM	X		3
-09	PC-29		12:30		ARM	X		3
						Container Type: P		
						Preservative: A		

ANALYSIS: ☐ VOC: 8260 ☐ 624 ☐ 524.2 ☐ SVOC: ☐ ABN ☐ PAH ☐ METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15 ☐ METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13 ☐ EPH: ☐ Ranges & Targets ☐ Ranges Only ☐ VPH: ☐ Ranges & Targets ☐ Ranges Only ☐ PCB ☐ PEST ☐ TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO
Filtration ☐ Field ☐ Lab to do
Preservation ☐ Lab to do

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H= $Na_2S_2O_3$
I= Ascorbic Acid
J= NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Flora Su	06/14/24 1239	[illegible] MCL	6/14 12:39
[illegible] MCL	6/14 17:51	[illegible]	6/14 1751
[illegible]	6/17/24 1525	MCL	6/17 M 1525
[illegible]	6/17/24 1643	Emily Bracken	6/17/24 16:40

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L2433707
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Jennifer McKechnie
Phone:	(781) 278-3864
Project Name:	BARNSTABLE
Project Number:	01.0177641.00
Report Date:	08/13/24

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433707
Report Date: 08/13/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2433707-01	MW-28D	WATER	155 S. FLINT ROCK ROAD	06/12/24 09:25	06/14/24
L2433707-02	MW-28S	WATER	155 S. FLINT ROCK ROAD	06/12/24 10:18	06/14/24
L2433707-03	MW-9S	WATER	155 S. FLINT ROCK ROAD	06/12/24 12:18	06/14/24
L2433707-04	MW-9D	WATER	155 S. FLINT ROCK ROAD	06/12/24 15:15	06/14/24
L2433707-05	MW-1	WATER	155 S. FLINT ROCK ROAD	06/12/24 09:00	06/14/24

Project Name:	BARNSTABLE	**Lab Number:**	L2433707
Project Number:	01.0177641.00	**Report Date:**	08/13/24

MADEP MCP Response Action Analytical Report Certification

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

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

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

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

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

Project Name:	BARNSTABLE	**Lab Number:**	L2433707
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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:	BARNSTABLE	**Lab Number:**	L2433707
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Case Narrative (continued)

Report Revision

August 13, 2024: At the client's request, all non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Report Submission

July 08, 2024: This final report includes the results of all requested analyses.

June 24, 2024: This is a preliminary report.

MCP Related Narratives

Volatile Organics

L2433707-02: Initial calibration utilized a quadratic fit for: cis-1,3-dichloropropene, 1,2,4-trichlorobenzene, naphthalene

In reference to question H:

L2433707-02: Initial Calibration did not meet:

Lowest Calibration Standard Minimum Response Factor: 1,1-dichloroethane (0.2083), cis-1,2-dichloroethene (0.1201), bromochloromethane (0.0727), chloroform (0.257), trichloroethene (0.1451), 1,2-dichloropropane (0.1222), bromodichloromethane (0.2), 1,4-dioxane (0.0006), trans-1,3-dichloropropene (0.1531), 1,1,2-trichloroethane (0.1208), 1,2-dibromoethane (0.1265), 1,2,3-trichlorobenzene (0.358)

Average Response Factor: 1,1-dichloroethane, cis-1,2-dichloroethene, bromochloromethane, chloroform, trichloroethene, 1,2-dichloropropane, bromodichloromethane, 1,4-dioxane, trans-1,3-dichloropropene, 1,1,2-trichloroethane, 1,2-dibromoethane

Verification: carbon disulfide (63%)

L2433707-02: The associated continuing calibration standard is outside the acceptance criteria for several compounds; however, it is within overall method allowances. Associated results are considered to be biased high if the %D is negative and biased low if the %D is positive. A copy of the continuing calibration standard is

Project Name:	BARNSTABLE	**Lab Number:**	L2433707
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Case Narrative (continued)

included as an addendum to this report.

VPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

Non-MCP Related Narratives

Perfluorinated Alkyl Acids by 1633

L2433707-02 and -03: The sample was re-analyzed on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

The WG1942667-5 MSD recoveries, performed on L2433707-01, are outside the acceptance criteria for perfluorohexanesulfonic acid (pfhxs) (23%) and perfluorooctanesulfonic acid (pfos) (0%).

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: Kelly Stenstrom

Title: Technical Director/Representative Date: 08/13/24

QC OUTLIER SUMMARY REPORT

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433707
Report Date: 08/13/24

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
MCP Volatile Organics - Westborough Lab								
8260D	Batch QC	WG1937457-4	Methyl ethyl ketone	LCSD	140	70-130	02	potential high bias
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab								
1633	Batch QC (L2433707-01)	WG1942667-5	Perfluorohexanesulfonic Acid (PFHxS)	MSD	23	40-150	01-05	potential low bias
1633	Batch QC (L2433707-01)	WG1942667-5	Perfluorooctanesulfonic Acid (PFOS)	MSD	0	40-150	01-05	potential low bias

ORGANICS

VOLATILES

Project Name: BARNSTABLE **Lab Number:** L2433707

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-02 Date Collected: 06/12/24 10:18
Client ID: MW-28S Date Received: 06/14/24
Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 141,8260D
Analytical Date: 06/20/24 13:27
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	0.68	1
1,1-Dichloroethane	ND		ug/l	1.0	0.21	1
Chloroform	2.8		ug/l	1.0	0.22	1
Carbon tetrachloride	ND		ug/l	1.0	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	1.0	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14	1
Tetrachloroethene	ND		ug/l	1.0	0.18	1
Chlorobenzene	ND		ug/l	1.0	0.18	1
Trichlorofluoromethane	ND		ug/l	2.0	0.16	1
1,2-Dichloroethane	ND		ug/l	1.0	0.13	1
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16	1
Bromodichloromethane	ND		ug/l	1.0	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14	1
1,1-Dichloropropene	ND		ug/l	2.0	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	1.0	0.20	1
Ethylbenzene	ND		ug/l	1.0	0.17	1
Chloromethane	ND		ug/l	2.0	0.20	1
Bromomethane	ND		ug/l	2.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.0	0.13	1
1,1-Dichloroethene	ND		ug/l	1.0	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16	1

Project Name: BARNSTABLE **Lab Number:** L2433707

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-02 Date Collected: 06/12/24 10:18

Client ID: MW-28S Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

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

Project Name: BARNSTABLE **Lab Number:** L2433707

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-02 Date Collected: 06/12/24 10:18

Client ID: MW-28S Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	107		70-130

Project Name: BARNSTABLE **Lab Number:** L2433707

Project Number: 01.0177641.00 **Report Date:** 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 06/20/24 12:13
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 02 Batch: WG1937457-5					
Methylene chloride	ND		ug/l	2.0	0.68
1,1-Dichloroethane	ND		ug/l	1.0	0.21
Chloroform	ND		ug/l	1.0	0.22
Carbon tetrachloride	ND		ug/l	1.0	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	1.0	0.15
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14
Tetrachloroethene	ND		ug/l	1.0	0.18
Chlorobenzene	ND		ug/l	1.0	0.18
Trichlorofluoromethane	ND		ug/l	2.0	0.16
1,2-Dichloroethane	ND		ug/l	1.0	0.13
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16
Bromodichloromethane	ND		ug/l	1.0	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14
1,1-Dichloropropene	ND		ug/l	2.0	0.24
Bromoform	ND		ug/l	2.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	1.0	0.20
Ethylbenzene	ND		ug/l	1.0	0.17
Chloromethane	ND		ug/l	2.0	0.20
Bromomethane	ND		ug/l	2.0	0.26
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.0	0.13
1,1-Dichloroethene	ND		ug/l	1.0	0.17
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16
Trichloroethene	ND		ug/l	1.0	0.18

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433707
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 06/20/24 12:13
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 02 Batch: WG1937457-5					
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19
Methyl tert butyl ether	ND		ug/l	2.0	0.17
p/m-Xylene	ND		ug/l	2.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16
Dibromomethane	ND		ug/l	2.0	0.36
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18
Styrene	ND		ug/l	1.0	0.36
Dichlorodifluoromethane	ND		ug/l	2.0	0.24
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	2.0	0.30
Methyl ethyl ketone	ND		ug/l	5.0	1.9
Methyl isobutyl ketone	ND		ug/l	5.0	0.42
2-Hexanone	ND		ug/l	5.0	0.52
Bromochloromethane	ND		ug/l	2.0	0.15
Tetrahydrofuran	ND		ug/l	2.0	0.52
2,2-Dichloropropane	ND		ug/l	2.0	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
1,3-Dichloropropane	ND		ug/l	2.0	0.21
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16
Bromobenzene	ND		ug/l	2.0	0.15
n-Butylbenzene	ND		ug/l	2.0	0.19
sec-Butylbenzene	ND		ug/l	2.0	0.18
tert-Butylbenzene	ND		ug/l	2.0	0.20
o-Chlorotoluene	ND		ug/l	2.0	0.22

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433707
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 06/20/24 12:13
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 02 Batch: WG1937457-5					
p-Chlorotoluene	ND		ug/l	2.0	0.18
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35
Hexachlorobutadiene	ND		ug/l	0.60	0.22
Isopropylbenzene	ND		ug/l	2.0	0.19
p-Isopropyltoluene	ND		ug/l	2.0	0.19
Naphthalene	ND		ug/l	2.0	0.22
n-Propylbenzene	ND		ug/l	2.0	0.17
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22
1,3,5-Trimethylbenzene	ND		ug/l	2.0	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.0	0.19
Diethyl ether	ND		ug/l	2.0	0.16
Diisopropyl Ether	ND		ug/l	2.0	0.42
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28
1,4-Dioxane	ND		ug/l	250	61.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	106		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433707

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG1937457-3 WG1937457-4								
Methylene chloride	94		95		70-130	1		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	98		100		70-130	2		20
Carbon tetrachloride	92		94		70-130	2		20
1,2-Dichloropropane	110		110		70-130	0		20
Dibromochloromethane	93		98		70-130	5		20
1,1,2-Trichloroethane	100		110		70-130	10		20
Tetrachloroethene	96		95		70-130	1		20
Chlorobenzene	100		110		70-130	10		20
Trichlorofluoromethane	99		100		70-130	1		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	95		100		70-130	5		20
Bromodichloromethane	96		100		70-130	4		20
trans-1,3-Dichloropropene	110		110		70-130	0		20
cis-1,3-Dichloropropene	97		100		70-130	3		20
1,1-Dichloropropene	100		100		70-130	0		20
Bromoform	85		87		70-130	2		20
1,1,2,2-Tetrachloroethane	110		110		70-130	0		20
Benzene	100		100		70-130	0		20
Toluene	100		110		70-130	10		20
Ethylbenzene	100		110		70-130	10		20
Chloromethane	120		120		70-130	0		20
Bromomethane	100		94		70-130	6		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433707

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG1937457-3 WG1937457-4								
Vinyl chloride	100		100		70-130	0		20
Chloroethane	99		94		70-130	5		20
1,1-Dichloroethene	96		98		70-130	2		20
trans-1,2-Dichloroethene	97		96		70-130	1		20
Trichloroethene	98		100		70-130	2		20
1,2-Dichlorobenzene	98		100		70-130	2		20
1,3-Dichlorobenzene	98		100		70-130	2		20
1,4-Dichlorobenzene	97		97		70-130	0		20
Methyl tert butyl ether	95		100		70-130	5		20
p/m-Xylene	100		105		70-130	5		20
o-Xylene	90		95		70-130	5		20
cis-1,2-Dichloroethene	98		100		70-130	2		20
Dibromomethane	92		99		70-130	7		20
1,2,3-Trichloropropane	110		110		70-130	0		20
Styrene	90		95		70-130	5		20
Dichlorodifluoromethane	110		110		70-130	0		20
Acetone	120		120		70-130	0		20
Carbon disulfide	110		100		70-130	10		20
Methyl ethyl ketone	130		**140**	Q	70-130	7		20
Methyl isobutyl ketone	100		110		70-130	10		20
2-Hexanone	100		110		70-130	10		20
Bromochloromethane	98		100		70-130	2		20
Tetrahydrofuran	120		130		70-130	8		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433707

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG1937457-3 WG1937457-4								
2,2-Dichloropropane	110		110		70-130	0		20
1,2-Dibromoethane	100		110		70-130	10		20
1,3-Dichloropropane	100		110		70-130	10		20
1,1,1,2-Tetrachloroethane	99		100		70-130	1		20
Bromobenzene	95		95		70-130	0		20
n-Butylbenzene	97		98		70-130	1		20
sec-Butylbenzene	96		98		70-130	2		20
tert-Butylbenzene	93		95		70-130	2		20
o-Chlorotoluene	110		110		70-130	0		20
p-Chlorotoluene	100		110		70-130	10		20
1,2-Dibromo-3-chloropropane	88		96		70-130	9		20
Hexachlorobutadiene	87		90		70-130	3		20
Isopropylbenzene	90		93		70-130	3		20
p-Isopropyltoluene	94		96		70-130	2		20
Naphthalene	81		86		70-130	6		20
n-Propylbenzene	100		100		70-130	0		20
1,2,3-Trichlorobenzene	90		96		70-130	6		20
1,2,4-Trichlorobenzene	89		93		70-130	4		20
1,3,5-Trimethylbenzene	100		100		70-130	0		20
1,2,4-Trimethylbenzene	97		99		70-130	2		20
Diethyl ether	100		110		70-130	10		20
Diisopropyl Ether	110		120		70-130	9		20
Ethyl-Tert-Butyl-Ether	99		110		70-130	11		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433707

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG1937457-3 WG1937457-4								
Tertiary-Amyl Methyl Ether	96		100		70-130	4		20
1,4-Dioxane	98		100		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104		105		70-130
Toluene-d8	106		109		70-130
4-Bromofluorobenzene	107		106		70-130
Dibromofluoromethane	99		97		70-130

SEMIVOLATILES

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433707
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-01
Client ID: MW-28D
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/12/24 09:25
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/03/24 19:40
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	23.3		ng/l	6.04	0.967	1
Perfluoropentanoic Acid (PFPeA)	57.9		ng/l	3.02	0.808	1
Perfluorobutanesulfonic Acid (PFBS)	8.10		ng/l	1.51	0.506	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.04	1.58	1
Perfluorohexanoic Acid (PFHxA)	53.1		ng/l	1.51	0.446	1
Perfluoropentanesulfonic Acid (PFPeS)	12.8		ng/l	1.51	0.264	1
Perfluoroheptanoic Acid (PFHpA)	30.8		ng/l	1.51	0.302	1
Perfluorohexanesulfonic Acid (PFHxS)	164		ng/l	1.51	0.363	1
Perfluorooctanoic Acid (PFOA)	28.8		ng/l	1.51	0.657	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	4.65	J	ng/l	6.04	2.04	1
Perfluoroheptanesulfonic Acid (PFHpS)	4.73		ng/l	1.51	0.408	1
Perfluorononanoic Acid (PFNA)	27.7		ng/l	1.51	0.476	1
Perfluorooctanesulfonic Acid (PFOS)	232		ng/l	1.51	0.687	1
Perfluorodecanoic Acid (PFDA)	1.59		ng/l	1.51	0.612	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.04	2.35	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.51	0.468	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.51	0.823	1
Perfluoroundecanoic Acid (PFUnA)	1.05	J	ng/l	1.51	0.657	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.51	0.347	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.51	0.408	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.51	0.816	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.51	0.695	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.51	0.566	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.51	0.400	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.04	0.846	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.04	0.952	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.51	0.574	1

Project Name: BARNSTABLE **Lab Number:** L2433707

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-01 Date Collected: 06/12/24 09:25

Client ID: MW-28D Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.04	1.25	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.04	1.25	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.51	0.657	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.51	0.695	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.1	3.55	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.1	1.85	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.02	0.430	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.02	0.400	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.02	0.332	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.02	1.78	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.55	2.49	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.8	8.84	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.8	5.96	1

Project Name: BARNSTABLE **Lab Number:** L2433707

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-01 Date Collected: 06/12/24 09:25

Client ID: MW-28D Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	77		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	82		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	81		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	93		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	78		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	81		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	74		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	74		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	84		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	77		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	76		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	66		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	69		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	66		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	68		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	84		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	76		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	72		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	59		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	80		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	62		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	64		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	76		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	79		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433707
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-02
Client ID: MW-28S
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/12/24 10:18
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/03/24 20:18
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	110		ng/l	5.97	0.955	1
Perfluoropentanoic Acid (PFPeA)	354		ng/l	2.98	0.798	1
Perfluorobutanesulfonic Acid (PFBS)	39.9		ng/l	1.49	0.500	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.97	1.56	1
Perfluorohexanoic Acid (PFHxA)	440		ng/l	1.49	0.440	1
Perfluoropentanesulfonic Acid (PFPeS)	71.3		ng/l	1.49	0.261	1
Perfluoroheptanoic Acid (PFHpA)	239		ng/l	1.49	0.298	1
Perfluorohexanesulfonic Acid (PFHxS)	1200	E	ng/l	1.49	0.358	1
Perfluorooctanoic Acid (PFOA)	336		ng/l	1.49	0.649	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	136		ng/l	5.97	2.01	1
Perfluoroheptanesulfonic Acid (PFHpS)	14.3		ng/l	1.49	0.403	1
Perfluorononanoic Acid (PFNA)	68.6		ng/l	1.49	0.470	1
Perfluorooctanesulfonic Acid (PFOS)	739	E	ng/l	1.49	0.679	1
Perfluorodecanoic Acid (PFDA)	25.1		ng/l	1.49	0.604	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	211		ng/l	5.97	2.32	1
Perfluorononanesulfonic Acid (PFNS)	3.03		ng/l	1.49	0.462	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.49	0.813	1
Perfluoroundecanoic Acid (PFUnA)	86.2		ng/l	1.49	0.649	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.49	0.343	1
Perfluorooctanesulfonamide (PFOSA)	71.3	F	ng/l	1.49	0.403	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.49	0.806	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.49	0.686	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.49	0.560	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.49	0.395	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.97	0.836	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.97	0.940	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.49	0.567	1

Project Name: BARNSTABLE **Lab Number:** L2433707

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-02 Date Collected: 06/12/24 10:18

Client ID: MW-28S Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.97	1.23	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.97	1.23	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.49	0.649	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.49	0.686	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.9	3.51	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.9	1.83	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.98	0.425	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.98	0.395	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.98	0.328	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.98	1.76	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.46	2.46	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.3	8.73	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.3	5.89	1

Project Name: BARNSTABLE **Lab Number:** L2433707

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-02 Date Collected: 06/12/24 10:18

Client ID: MW-28S Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	61		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	63		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	67		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	101		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	60		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	67		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	59		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	58		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	79		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	55		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	53		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	41		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	55		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	40		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	38		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	58		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	54		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	41		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	39		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	65		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	43		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	42		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	51		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	49		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433707
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-02 D
Client ID: MW-28S
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/12/24 10:18
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/05/24 07:00
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorohexanesulfonic Acid (PFHxS)	1180		ng/l	14.9	3.58	10
Perfluorooctanesulfonic Acid (PFOS)	671		ng/l	14.9	6.79	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	54		46-115
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	54		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433707
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-03
Client ID: MW-9S
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/12/24 12:18
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/03/24 20:31
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	19.0		ng/l	5.75	0.920	1
Perfluoropentanoic Acid (PFPeA)	51.0		ng/l	2.87	0.769	1
Perfluorobutanesulfonic Acid (PFBS)	18.2		ng/l	1.44	0.482	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.75	1.50	1
Perfluorohexanoic Acid (PFHxA)	70.2		ng/l	1.44	0.424	1
Perfluoropentanesulfonic Acid (PFPeS)	24.2		ng/l	1.44	0.252	1
Perfluoroheptanoic Acid (PFHpA)	13.4		ng/l	1.44	0.287	1
Perfluorohexanesulfonic Acid (PFHxS)	264		ng/l	1.44	0.345	1
Perfluorooctanoic Acid (PFOA)	52.7		ng/l	1.44	0.625	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.75	1.94	1
Perfluoroheptanesulfonic Acid (PFHpS)	7.26		ng/l	1.44	0.388	1
Perfluorononanoic Acid (PFNA)	51.6		ng/l	1.44	0.453	1
Perfluorooctanesulfonic Acid (PFOS)	2070	E	ng/l	1.44	0.654	1
Perfluorodecanoic Acid (PFDA)	3.83		ng/l	1.44	0.582	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.75	2.24	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.44	0.446	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.44	0.783	1
Perfluoroundecanoic Acid (PFUnA)	2.42		ng/l	1.44	0.625	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.44	0.330	1
Perfluorooctanesulfonamide (PFOSA)	9.74		ng/l	1.44	0.388	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.44	0.776	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.44	0.661	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.44	0.539	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.44	0.381	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.75	0.805	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.75	0.906	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.44	0.546	1

Project Name: BARNSTABLE **Lab Number:** L2433707

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-03 Date Collected: 06/12/24 12:18

Client ID: MW-9S Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.75	1.18	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.75	1.18	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.44	0.625	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.44	0.661	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.4	3.38	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.4	1.76	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.87	0.410	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.87	0.381	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.87	0.316	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.87	1.70	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.19	2.37	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	35.9	8.41	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	35.9	5.67	1

Project Name: BARNSTABLE **Lab Number:** L2433707

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-03 Date Collected: 06/12/24 12:18

Client ID: MW-9S Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	71		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	64		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	73		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	127		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	71		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	82		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	70		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	71		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	107		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	71		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	66		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	64		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	86		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	59		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	58		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	89		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	81		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	58		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	55		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	71		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	68		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	65		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	78		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	72		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433707
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-03 D
Client ID: MW-9S
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/12/24 12:18
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/05/24 07:13
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	1780		ng/l	14.4	6.54	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	68		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433707
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-04
Client ID: MW-9D
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/12/24 15:15
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/03/24 20:43
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	11.6		ng/l	5.80	0.927	1
Perfluoropentanoic Acid (PFPeA)	28.9		ng/l	2.90	0.775	1
Perfluorobutanesulfonic Acid (PFBS)	5.76		ng/l	1.45	0.485	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.80	1.51	1
Perfluorohexanoic Acid (PFHxA)	32.4		ng/l	1.45	0.428	1
Perfluoropentanesulfonic Acid (PFPeS)	8.23		ng/l	1.45	0.254	1
Perfluoroheptanoic Acid (PFHpA)	23.5		ng/l	1.45	0.290	1
Perfluorohexanesulfonic Acid (PFHxS)	57.2		ng/l	1.45	0.348	1
Perfluorooctanoic Acid (PFOA)	21.5		ng/l	1.45	0.630	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	6.74		ng/l	5.80	1.96	1
Perfluoroheptanesulfonic Acid (PFHpS)	3.38		ng/l	1.45	0.391	1
Perfluorononanoic Acid (PFNA)	34.5		ng/l	1.45	0.456	1
Perfluorooctanesulfonic Acid (PFOS)	218		ng/l	1.45	0.659	1
Perfluorodecanoic Acid (PFDA)	1.85		ng/l	1.45	0.587	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.80	2.25	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.45	0.449	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.45	0.790	1
Perfluoroundecanoic Acid (PFUnA)	8.04		ng/l	1.45	0.630	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.45	0.333	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.45	0.391	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.45	0.782	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.45	0.667	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.45	0.543	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.45	0.384	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.80	0.812	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.80	0.913	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.45	0.551	1

Project Name: BARNSTABLE **Lab Number:** L2433707

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-04 Date Collected: 06/12/24 15:15

Client ID: MW-9D Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.80	1.20	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.80	1.20	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.45	0.630	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.45	0.667	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.5	3.40	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.5	1.78	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.90	0.413	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.90	0.384	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.90	0.319	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.90	1.71	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.24	2.39	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.2	8.48	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.2	5.72	1

Project Name: BARNSTABLE **Lab Number:** L2433707

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-04 Date Collected: 06/12/24 15:15

Client ID: MW-9D Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	85		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	90		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	83		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	116		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	84		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	91		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	81		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	83		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	90		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	78		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	67		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	59		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	66		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	49		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	54		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	70		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	61		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	55		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	48		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	87		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	58		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	59		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	65		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	65		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433707
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-05
Client ID: MW-1
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/12/24 09:00
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/03/24 20:56
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	7.41		ng/l	6.40	1.02	1
Perfluoropentanoic Acid (PFPeA)	19.8		ng/l	3.20	0.856	1
Perfluorobutanesulfonic Acid (PFBS)	1.46	J	ng/l	1.60	0.536	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.40	1.67	1
Perfluorohexanoic Acid (PFHxA)	14.9		ng/l	1.60	0.472	1
Perfluoropentanesulfonic Acid (PFPeS)	1.48	J	ng/l	1.60	0.280	1
Perfluoroheptanoic Acid (PFHpA)	7.67		ng/l	1.60	0.320	1
Perfluorohexanesulfonic Acid (PFHxS)	25.2		ng/l	1.60	0.384	1
Perfluorooctanoic Acid (PFOA)	11.6		ng/l	1.60	0.696	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	21.9		ng/l	6.40	2.16	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.83		ng/l	1.60	0.432	1
Perfluorononanoic Acid (PFNA)	0.504	J	ng/l	1.60	0.504	1
Perfluorooctanesulfonic Acid (PFOS)	36.2		ng/l	1.60	0.728	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.648	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.40	2.49	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.496	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.872	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.696	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.368	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.432	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.864	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.736	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.600	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.424	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.40	0.896	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.40	1.01	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.608	1

Project Name: BARNSTABLE **Lab Number:** L2433707

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-05 Date Collected: 06/12/24 09:00

Client ID: MW-1 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.40	1.32	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.40	1.32	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.696	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.736	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.76	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.456	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.424	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.352	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	1.89	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.00	2.64	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.0	9.36	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.0	6.31	1

Project Name: BARNSTABLE **Lab Number:** L2433707

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-05 Date Collected: 06/12/24 09:00

Client ID: MW-1 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	83		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	78		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	83		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	117		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	82		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	89		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	85		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	83		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	97		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	81		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	87		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	72		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	83		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	62		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	69		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	77		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	69		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	66		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	59		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	83		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	57		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	57		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	74		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	71		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433707
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 07/03/24 19:01
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-05 Batch: WG1942667-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.40	1.02
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.20	0.856
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.60	0.536
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.40	1.67
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.60	0.472
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.60	0.280
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.60	0.320
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.60	0.384
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.60	0.696
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.40	2.16
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.60	0.432
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.60	0.504
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.60	0.728
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.648
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.40	2.49
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.496
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.872
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.696
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.368
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.432
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.864
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.736
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.600
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.424
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.40	0.896
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.40	1.01
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.608

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433707
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 07/03/24 19:01
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-05 Batch: WG1942667-1					
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.40	1.32
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.40	1.32
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.696
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.736
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.76
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.456
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.424
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.352
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	1.89
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.00	2.64
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.0	9.36
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.0	6.31

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433707
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 07/03/24 19:01
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-05 Batch: WG1942667-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	88		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	95		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	93		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	93		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	89		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	88		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	84		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	85		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	94		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	92		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	92		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	85		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	75		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	83		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	84		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	88		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	86		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	82		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	74		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	84		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	58		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	58		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	79		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	81		10-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433707

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-05 Batch: WG1942667-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	108		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	103		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	110		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	98		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	107		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	111		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	102		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	102		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	102		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	110		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	92		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	98		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	101		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	100		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	109		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	94		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	117		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	102		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	91		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	98		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	86		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	102		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433707
Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-05 Batch: WG1942667-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	104		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	103		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	99		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	108		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	67		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	110		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	94		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	98		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	84		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	105		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	107		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	103		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	90		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	105		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	106		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	102		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	86		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	64		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433707

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-05 Batch: WG1942667-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	75				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	85				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	73				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	80				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	75				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	75				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	70				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	71				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	74				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	71				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	76				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	75				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	69				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	63				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	74				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	72				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	67				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	67				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	58				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	75				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	48				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	48				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	67				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	66				10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433707
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-05 Batch: WG1942667-3								
Perfluorobutanoic Acid (PFBA)	93		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	92		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	92		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	91		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	101		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	100		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	89		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	90		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	86		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	97		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	90		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	82		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	85		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	90		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	97		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	90		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	95		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	92		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	86		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	90		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	86		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	92		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433707
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-05 Batch: WG1942667-3								
Perfluorotridecanoic Acid (PFTrDA)	92		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	93		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	92		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	102		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	64		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	104		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	94		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	102		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	90		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	106		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	101		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	98		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	82		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	106		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	95		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	90		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	95		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	78		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433707
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-05 Batch: WG1942667-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	97				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	105				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	95				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	100				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	90				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	100				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	94				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	96				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	100				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	90				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	103				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	85				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	86				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	85				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	83				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	96				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	90				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	84				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	68				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	93				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	63				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	67				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	84				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	85				10-130

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433707
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1942667-4 WG1942667-5 QC Sample: L2433707-01 Client ID: MW-28D												
Perfluorobutanoic Acid (PFBA)	23.3	74.1	93.3	94		97.3	98		40-150	4		30
Perfluoropentanoic Acid (PFPeA)	57.9	37	93.9	97		93.5	95		40-150	0		30
Perfluorobutanesulfonic Acid (PFBS)	8.10	16.4	23.0	91		23.5	92		40-150	2		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	69.4	65.8	95		72.6	103		40-150	10		30
Perfluorohexanoic Acid (PFHxA)	53.1	18.5	72.7	106		75.4	119		40-150	4		30
Perfluoropentanesulfonic Acid (PFPeS)	12.8	17.4	31.3	106		31.0	103		40-150	1		30
Perfluoroheptanoic Acid (PFHpA)	30.8	18.5	47.8	92		49.3	98		40-150	3		30
Perfluorohexanesulfonic Acid (PFHxS)	164	16.9	182	106		168	**23**	Q	40-150	8		30
Perfluorooctanoic Acid (PFOA)	28.8	18.5	45.8	92		47.5	100		40-150	4		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	4.65J	70.4	73.0	97		79.7	105		40-150	9		30
Perfluoroheptanesulfonic Acid (PFHpS)	4.73	17.6	21.0	92		22.8	101		40-150	8		30
Perfluorononanoic Acid (PFNA)	27.7	18.5	45.6	97		43.0	81		40-150	6		30
Perfluorooctanesulfonic Acid (PFOS)	232	17.2	239	41		232	**0**	Q	40-150	3		30
Perfluorodecanoic Acid (PFDA)	1.59	18.5	19.6	97		20.2	99		40-150	3		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	71.1	72.8	102		70.4	98		40-150	3		30
Perfluorononanesulfonic Acid (PFNS)	ND	17.8	17.6	99		18.4	102		40-150	4		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	18.5	18.5	100		17.6	94		40-150	5		30
Perfluoroundecanoic Acid (PFUnA)	1.05J	18.5	17.7	90		18.4	92		40-150	4		30
Perfluorodecanesulfonic Acid (PFDS)	ND	17.9	16.9	95		17.2	95		40-150	2		30
Perfluorooctanesulfonamide (PFOSA)	ND	18.5	17.7	96		20.2	108		40-150	13		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	18.5	16.8	91		17.7	94		40-150	5		30
Perfluorododecanoic Acid (PFDoA)	ND	18.5	17.0	92		18.0	96		40-150	6		30

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433707
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1942667-4 WG1942667-5 QC Sample: L2433707-01 Client ID: MW-28D												
Perfluorotridecanoic Acid (PFTrDA)	ND	18.5	17.6	95		19.8	105		40-150	12		30
Perfluorotetradecanoic Acid (PFTeDA)	ND	18.5	17.2	93		19.1	102		40-150	10		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	74.1	68.1	92		74.9	100		40-150	10		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	70	72.5	104		80.4	113		40-150	10		30
Perfluorododecanesulfonic Acid (PFDoS)	ND	18	13.6	76		14.0	77		40-150	3		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	69.3	71.1	103		78.1	111		40-150	9		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	70	68.9	98		73.3	103		40-150	6		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	18.5	16.9	91		19.7	105		40-150	15		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	18.5	15.8	85		19.6	104		40-150	21		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	185	191	103		217	116		40-150	13		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	185	184	99		200	106		40-150	8		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	37	42.7	115		43.1	115		40-150	1		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	37	33.3	90		34.9	93		40-150	5		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	33	34.2	104		39.9	119		40-150	15		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	37	32.9	89		41.3	110		40-150	23		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	92.6	95.2	103		98.6	105		40-150	4		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	463	466	101		509	108		40-150	9		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	463	423	91		449	96		40-150	6		30

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433707
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1942667-4 WG1942667-5 QC Sample: L2433707-01 Client ID: MW-28D

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	66		51		10-213
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	81		55		10-290
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	78		56		10-261
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	66		41		11-97
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	75		52		10-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	77		53		10-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	63		39		11-94
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	64		44		10-172
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	76		50		10-137
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	68		52		46-115
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	80		49		14-108
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	73		53		32-114
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	74		53		41-125
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	71		50		16-123
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	65		45		28-115
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	69		49		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	73		53		27-156
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	71		50		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	64		46		10-145
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	70		51		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	73		55		29-123
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	69		49		39-121
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	71		51		38-114

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433707

Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1942667-4 WG1942667-5 QC Sample: L2433707-01 Client ID: MW-28D												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	71		51		35-142

PETROLEUM HYDROCARBONS

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433707
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID:	L2433707-02	Date Collected:	06/12/24 10:18
Client ID:	MW-28S	Date Received:	06/14/24
Sample Location:	155 S. FLINT ROCK ROAD	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Water		
Analytical Method:	131,VPH-18-2.1		
Analytical Date:	06/20/24 21:11		
Analyst:	BAD		

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	100	100.	1
C9-C12 Aliphatics	ND		ug/l	100	100.	1
C9-C10 Aromatics	ND		ug/l	100	100.	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	100	100.	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	100	100.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	105		70-130
2,5-Dibromotoluene-FID	105		70-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433707
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID:	L2433707-02			Date Collected:	06/12/24 10:18
Client ID:	MW-28S			Date Received:	06/14/24
Sample Location:	155 S. FLINT ROCK ROAD			Field Prep:	Not Specified
Sample Depth:					
Matrix:	Water			Extraction Method:	EPA 3510C
Analytical Method:	135,EPH-19-2.1			Extraction Date:	06/21/24 04:57
Analytical Date:	06/21/24 16:51	M.S. Analytical Date:	06/23/24 01:03	Cleanup Method1:	EPH-19-2.1
Analyst:	SBC	M.S. Analyst:	RP	Cleanup Date1:	06/21/24

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/Targets via GCMS-SIM - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	100.	1
C19-C36 Aliphatics	ND		ug/l	100	100.	1
C11-C22 Aromatics	ND		ug/l	100	100.	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	100.	1
Naphthalene	ND		ug/l	0.400	0.136	1
2-Methylnaphthalene	ND		ug/l	0.400	0.077	1
Acenaphthylene	ND		ug/l	0.400	0.054	1
Acenaphthene	ND		ug/l	0.400	0.091	1
Fluorene	ND		ug/l	0.400	0.097	1
Phenanthrene	ND		ug/l	0.400	0.084	1
Anthracene	ND		ug/l	0.400	0.079	1
Fluoranthene	ND		ug/l	0.400	0.121	1
Pyrene	ND		ug/l	0.400	0.114	1
Benzo(a)anthracene	ND		ug/l	0.400	0.088	1
Chrysene	ND		ug/l	0.400	0.102	1
Benzo(b)fluoranthene	ND		ug/l	0.400	0.102	1
Benzo(k)fluoranthene	ND		ug/l	0.400	0.126	1
Benzo(a)pyrene	ND		ug/l	0.200	0.072	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	0.095	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	0.091	1
Benzo(ghi)perylene	ND		ug/l	0.400	0.102	1

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433707
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433707-02
Client ID: MW-28S
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/12/24 10:18
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/Targets via GCMS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	52		40-140
o-Terphenyl	60		40-140
2-Fluorobiphenyl	66		40-140
2-Bromonaphthalene	68		40-140
O-Terphenyl-MS	41		40-140

Project Name: BARNSTABLE **Lab Number:** L2433707

Project Number: 01.0177641.00 **Report Date:** 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 135,EPH-19-2.1
Analytical Date: 06/21/24 11:54
Analyst: MTC

M.S. Analytical Date: 06/21/24 11:32
M.S. Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 06/21/24 00:00
Cleanup Method: EPH-19-2.1
Cleanup Date: 06/21/24

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/Targets via GCMS-SIM - Westborough Lab for sample(s): 02 Batch: WG1937343-1					
C9-C18 Aliphatics	ND		ug/l	100	100.
C19-C36 Aliphatics	ND		ug/l	100	100.
C11-C22 Aromatics	ND		ug/l	100	100.
C11-C22 Aromatics, Adjusted	ND		ug/l	100	100.
Naphthalene	ND		ug/l	0.400	0.136
2-Methylnaphthalene	ND		ug/l	0.400	0.077
Acenaphthylene	ND		ug/l	0.400	0.054
Acenaphthene	ND		ug/l	0.400	0.091
Fluorene	ND		ug/l	0.400	0.097
Phenanthrene	ND		ug/l	0.400	0.084
Anthracene	ND		ug/l	0.400	0.079
Fluoranthene	ND		ug/l	0.400	0.121
Pyrene	ND		ug/l	0.400	0.114
Benzo(a)anthracene	ND		ug/l	0.400	0.088
Chrysene	ND		ug/l	0.400	0.102
Benzo(b)fluoranthene	ND		ug/l	0.400	0.102
Benzo(k)fluoranthene	ND		ug/l	0.400	0.126
Benzo(a)pyrene	ND		ug/l	0.200	0.072
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	0.095
Dibenzo(a,h)anthracene	ND		ug/l	0.400	0.091
Benzo(ghi)perylene	ND		ug/l	0.400	0.102

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433707
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 135,EPH-19-2.1
Analytical Date: 06/21/24 11:54
Analyst: MTC
M.S. Analytical Date: 06/21/24 11:32
M.S. Analyst: RP
Extraction Method: EPA 3510C
Extraction Date: 06/21/24 00:00
Cleanup Method: EPH-19-2.1
Cleanup Date: 06/21/24

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/Targets via GCMS-SIM - Westborough Lab for sample(s): 02 Batch: WG1937343-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	67		40-140
o-Terphenyl	57		40-140
2-Fluorobiphenyl	60		40-140
2-Bromonaphthalene	62		40-140
O-Terphenyl-MS	54		40-140

Project Name: BARNSTABLE **Lab Number:** L2433707

Project Number: 01.0177641.00 **Report Date:** 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 131,VPH-18-2.1
Analytical Date: 06/20/24 15:04
Analyst: BAD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 02 Batch: WG1937642-4					
C5-C8 Aliphatics	ND		ug/l	100	100.
C9-C12 Aliphatics	ND		ug/l	100	100.
C9-C10 Aromatics	ND		ug/l	100	100.
C5-C8 Aliphatics, Adjusted	ND		ug/l	100	100.
C9-C12 Aliphatics, Adjusted	ND		ug/l	100	100.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	108		70-130
2,5-Dibromotoluene-FID	109		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433707
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/Targets via GCMS-SIM - Westborough Lab Associated sample(s): 02 Batch: WG1937343-2 WG1937343-3								
C9-C18 Aliphatics	63		58		40-140	8		20
C19-C36 Aliphatics	72		67		40-140	7		20
C11-C22 Aromatics	61		61		40-140	0		20
Naphthalene	66		66		40-140	0		20
2-Methylnaphthalene	69		72		40-140	4		20
Acenaphthylene	68		72		40-140	6		20
Acenaphthene	62		62		40-140	0		20
Fluorene	70		72		40-140	3		20
Phenanthrene	66		66		40-140	0		20
Anthracene	74		74		40-140	0		20
Fluoranthene	71		73		40-140	3		20
Pyrene	72		74		40-140	3		20
Benzo(a)anthracene	74		73		40-140	1		20
Chrysene	76		73		40-140	4		20
Benzo(b)fluoranthene	77		74		40-140	4		20
Benzo(k)fluoranthene	77		76		40-140	1		20
Benzo(a)pyrene	83		81		40-140	2		20
Indeno(1,2,3-cd)Pyrene	76		80		40-140	5		20
Dibenzo(a,h)anthracene	60		64		40-140	6		20
Benzo(ghi)perylene	54		58		40-140	7		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433707
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/Targets via GCMS-SIM - Westborough Lab Associated sample(s): 02 Batch: WG1937343-2 WG1937343-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	70		63		40-140
o-Terphenyl	63		64		40-140
2-Fluorobiphenyl	63		66		40-140
2-Bromonaphthalene	66		68		40-140
O-Terphenyl-MS	61		63		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433707
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 02 Batch: WG1937642-2 WG1937642-3								
C5-C8 Aliphatics	97		97		70-130	1		25
C9-C12 Aliphatics	109		111		70-130	2		25
C9-C10 Aromatics	103		105		70-130	2		25
Benzene	101		104		70-130	3		25
Toluene	100		103		70-130	3		25
Ethylbenzene	106		108		70-130	2		25
p/m-Xylene	105		106		70-130	1		25
o-Xylene	106		108		70-130	2		25
Methyl tert butyl ether	101		108		70-130	7		25
Naphthalene	103		111		70-130	7		25
1,2,4-Trimethylbenzene	103		105		70-130	2		25
Pentane	100		99		70-130	1		25
2-Methylpentane	98		99		70-130	1		25
2,2,4-Trimethylpentane	97		98		70-130	1		25
n-Nonane	108		109		30-130	1		25
n-Decane	115		116		70-130	1		25
n-Butylcyclohexane	105		106		70-130	1		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	120		122		70-130
2,5-Dibromotoluene-FID	116		121		70-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433707
Report Date: 08/13/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2433707-01A	Plastic 500ml unpreserved	A	NA		5.7	Y	Absent		A2-1633-DRAFT(28)
L2433707-01B	Plastic 500ml unpreserved	A	NA		5.7	Y	Absent		A2-1633-DRAFT(28)
L2433707-01C	Plastic 500ml unpreserved	A	NA		5.7	Y	Absent		A2-1633-DRAFT(28)
L2433707-02A	Plastic 500ml unpreserved	A	NA		5.7	Y	Absent		A2-1633-DRAFT(28)
L2433707-02B	Plastic 500ml unpreserved	A	NA		5.7	Y	Absent		A2-1633-DRAFT(28)
L2433707-02C	Plastic 500ml unpreserved	A	NA		5.7	Y	Absent		A2-1633-DRAFT(28)
L2433707-02D	Vial HCl preserved	A	NA		5.7	Y	Absent		MCP-8260-21(14)
L2433707-02E	Vial HCl preserved	A	NA		5.7	Y	Absent		MCP-8260-21(14)
L2433707-02F	Vial HCl preserved	A	NA		5.7	Y	Absent		MCP-8260-21(14)
L2433707-02G	Vial HCl preserved	A	NA		5.7	Y	Absent		VPH-18(14)
L2433707-02H	Vial HCl preserved	A	NA		5.7	Y	Absent		VPH-18(14)
L2433707-02I	Vial HCl preserved	A	NA		5.7	Y	Absent		VPH-18(14)
L2433707-02J	Amber 1000ml HCl preserved	A	<2	<2	5.7	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2433707-02K	Amber 1000ml HCl preserved	A	<2	<2	5.7	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2433707-03A	Plastic 500ml unpreserved	A	NA		5.7	Y	Absent		A2-1633-DRAFT(28)
L2433707-03B	Plastic 500ml unpreserved	A	NA		5.7	Y	Absent		A2-1633-DRAFT(28)
L2433707-03C	Plastic 500ml unpreserved	A	NA		5.7	Y	Absent		A2-1633-DRAFT(28)
L2433707-04A	Plastic 500ml unpreserved	A	NA		5.7	Y	Absent		A2-1633-DRAFT(28)
L2433707-04B	Plastic 500ml unpreserved	A	NA		5.7	Y	Absent		A2-1633-DRAFT(28)
L2433707-04C	Plastic 500ml unpreserved	A	NA		5.7	Y	Absent		A2-1633-DRAFT(28)
L2433707-05A	Plastic 500ml unpreserved	A	NA		5.7	Y	Absent		A2-1633-DRAFT(28)
L2433707-05B	Plastic 500ml unpreserved	A	NA		5.7	Y	Absent		A2-1633-DRAFT(28)
L2433707-05C	Plastic 500ml unpreserved	A	NA		5.7	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433707
Report Date: 08/13/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433707
Report Date: 08/13/24

PFAS PARAMETER SUMMARY

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

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433707
Report Date: 08/13/24

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:	BARNSTABLE	**Lab Number:**	L2433707
Project Number:	01.0177641.00	**Report Date:**	08/13/24

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

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

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

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

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

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

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

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

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2433707
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2433707
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

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

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

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration 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:	BARNSTABLE	**Lab Number:**	L2433707
Project Number:	01.0177641.00	**Report Date:**	08/13/24

REFERENCES

131 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, February 2018, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, June 1, 2018.

135 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, December 2019, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, March 1, 2020.

141 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA and IIB, November 2021.

144 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. Draft EPA Method 1633, EPA Document 821-D-22-001, June 2022.

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

Mansfield Facility
SM 2540D: TSS.
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.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

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

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, 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: 6/17/24

ALPHA Job #: L2433707

ALPHA
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: GZA GeoEnvironmental, Inc.
Address: 249 Vanderbilt Avenue
Norwood, MA 02062
Phone: 781-589-3866
Email: Jennifer.McKechnie@gza.com; Pierson.Thompson@gza.com; Flora.Su@gza.com
Additional Project Information:

Project Information

Project Name: Barnstable
Project Location: 155 S Flint Rock Rd
Project #: 01.0177641.00
Project Manager: Jennifer McKechnie
ALPHA Quote #:

Turn-Around Time

[X] Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Report Information - Data Deliverables

[X] ADEx [X] EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

[X] Yes ☐ No MA MCP Analytical Methods ☐ Yes [X] No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
[X] Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes [X] No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: [X] 8260	SVOC: ☐ 624 ☐ 524.2 ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15 ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: [X] Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets [X] Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	PFAS: EPA 1633	Sample Comments	TOTAL # BOTTLES
33707-01	MW-28D	06/12/24	0925	GW	FKS								X		3
-02	MW-28S	06/12/24	1018	GW	FKS	X			X	X			X		11
-03	MW-9S	06/12/24	1218	GW	FKS								X		3
-04	MW-9D	06/12/24	1515	GW	FKS								X		3
-05	MW-1	06/12/24	0900	GW	VER								X		3

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

Container Type	V							A	V				P		
Preservative	B							B	B				A		

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Flora Su	06/14/24 1244	[signature] NRL	6/14 12:44
[signature] NRL	6/14 17:17	[signature]	06/14 1751
[signature]	6/17/24 1525	[signature]	6/17/24 0825

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

Method Blank Summary
Form 4
Volatiles

Client	: GZA GeoEnvironmental, Inc.	**Lab Number**	: L2433707
Project Name	: BARNSTABLE	**Project Number**	: 01.0177641.00
Lab Sample ID	: WG1937457-5	**Lab File ID**	: V16240620A09
Instrument ID	: VOA116		
Matrix	: WATER	**Analysis Date**	: 06/20/24 12:13

Client Sample No.	Lab Sample ID	Analysis Date
WG1937457-3LCS	WG1937457-3	06/20/24 09:00
WG1937457-4LCSD	WG1937457-4	06/20/24 09:23
MW-28S	L2433707-02	06/20/24 13:27

Calibration Verification Summary
Form 7
Volatiles

Client	: GZA GeoEnvironmental, Inc.		**Lab Number**	: L2433707	
Project Name	: BARNSTABLE		**Project Number**	: 01.0177641.00	
Instrument ID	: VOA116		**Calibration Date**	: 06/20/24 09:00	
Lab File ID	: V16240620A01		**Init. Calib. Date(s)**	: 05/31/24	06/01/24
Sample No	: WG1937457-2		**Init. Calib. Times**	: 23:29	03:27
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	80	0
Dichlorodifluoromethane	0.197	0.213	-	-8.1	20	78	0
Chloromethane	0.141	0.166	-	-17.7	20	91	0
Vinyl chloride	0.246	0.261	-	-6.1	20	77	0
Bromomethane	0.141	0.147	-	-4.3	20	91	0
Chloroethane	0.18	0.179	-	0.6	20	74	0
Trichlorofluoromethane	0.265	0.264	-	0.4	20	74	0
Ethyl ether	0.06	0.061	-	-1.7	20	81	0
1,1-Dichloroethene	0.134	0.129	-	3.7	20	74	0
Carbon disulfide	0.44	0.474	-	-7.7	20	83	0
Freon-113	0.154	0.153	-	0.6	20	74	0
Acrolein	0.015	0.015	-	0	20	82	0
Methylene chloride	0.175	0.165	-	5.7	20	81	0
Acetone	0.024	0.029	-	-20.8*	20	95	0
trans-1,2-Dichloroethene	0.148	0.144	-	2.7	20	76	0
Methyl acetate	0.057	0.065	-	-14	20	97	0
Methyl tert-butyl ether	0.27	0.257	-	4.8	20	81	0
tert-Butyl alcohol	0.00456	0.00548*	-	-20.2*	20	93	0
Diisopropyl ether	0.382	0.431	-	-12.8	20	91	0
1,1-Dichloroethane	0.264	0.284*	-	-7.6	20	82	0
Halothane	0.122	0.12	-	1.6	20	74	0
Acrylonitrile	0.029	0.029	-	0	20	79	0
Ethyl tert-butyl ether	0.333	0.329	-	1.2	20	90	0
Vinyl acetate	0.227	0.266	-	-17.2	20	111	0
cis-1,2-Dichloroethene	0.162	0.159*	-	1.9	20	74	0
2,2-Dichloropropane	0.173	0.194	-	-12.1	20	94	0
Bromochloromethane	0.086	0.084*	-	2.3	20	74	0
Cyclohexane	0.235	0.263	-	-11.9	20	86	0
Chloroform	0.287	0.281	-	2.1	20	77	0
Ethyl acetate	0.082	0.093	-	-13.4	20	101	0
Carbon tetrachloride	0.249	0.23	-	7.6	20	72	0
Tetrahydrofuran	0.027	0.031	-	-14.8	20	90	0
Dibromofluoromethane	0.265	0.262	-	1.1	20	81	0
1,1,1-Trichloroethane	0.252	0.241	-	4.4	20	73	0
2-Butanone	0.036	0.047	-	-30.6*	20	115	0
1,1-Dichloropropene	0.196	0.201	-	-2.6	20	77	0
Benzene	0.589	0.598	-	-1.5	20	76	0
tert-Amyl methyl ether	0.271	0.26	-	4.1	20	86	0
1,2-Dichloroethane-d4	0.267	0.278	-	-4.1	20	85	0
1,2-Dichloroethane	0.201	0.216	-	-7.5	20	86	0
Methyl cyclohexane	0.278	0.271	-	2.5	20	77	0
Trichloroethene	0.173	0.17*	-	1.7	20	73	0
Dibromomethane	0.099	0.091	-	8.1	20	73	0

*** Value outside of QC limits.**

Calibration Verification Summary
Form 7
Volatiles

Client	: GZA GeoEnvironmental, Inc.		**Lab Number**	: L2433707	
Project Name	: BARNSTABLE		**Project Number**	: 01.0177641.00	
Instrument ID	: VOA116		**Calibration Date**	: 06/20/24 09:00	
Lab File ID	: V16240620A01		**Init. Calib. Date(s)**	: 05/31/24	06/01/24
Sample No	: WG1937457-2		**Init. Calib. Times**	: 23:29	03:27
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichloropropane	0.151	0.167	-	-10.6	20	91	0
2-Chloroethyl vinyl ether	0.064	0.034	-	46.9*	20	49	0
Bromodichloromethane	0.245	0.236*	-	3.7	20	74	0
1,4-Dioxane	0.00072	0.00071*	-	1.4	20	84	0
cis-1,3-Dichloropropene	10	9.716	-	2.8	20	79	0
Chlorobenzene-d5	1	1	-	0	20	78	0
Toluene-d8	1.053	1.119	-	-6.3	20	81	0
Toluene	0.47	0.488	-	-3.8	20	76	0
4-Methyl-2-pentanone	10	10.163	-	-1.6	20	91	0
Tetrachloroethene	0.249	0.24	-	3.6	20	71	0
trans-1,3-Dichloropropene	0.217	0.235*	-	-8.3	20	83	0
Ethyl methacrylate	10	8.923	-	10.8	20	83	0
1,1,2-Trichloroethane	0.128	0.134*	-	-4.7	20	77	0
Chlorodibromomethane	0.218	0.202	-	7.3	20	70	0
1,3-Dichloropropane	0.248	0.257	-	-3.6	20	77	0
1,2-Dibromoethane	0.146	0.147*	-	-0.7	20	74	0
2-Hexanone	10	10.204	-	-2	20	96	0
Chlorobenzene	0.549	0.565	-	-2.9	20	77	0
Ethylbenzene	0.912	0.941	-	-3.2	20	76	0
1,1,1,2-Tetrachloroethane	0.21	0.208	-	1	20	76	0
p/m Xylene	0.365	0.371	-	-1.6	20	74	0
o Xylene	20	18.388	-	8.1	20	75	0
Styrene	20	18.516	-	7.4	20	76	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	79	0
Bromoform	0.272	0.231	-	15.1	20	70	0
Isopropylbenzene	10	9.002	-	10	20	74	0
4-Bromofluorobenzene	0.701	0.75	-	-7	20	85	0
Bromobenzene	0.484	0.459	-	5.2	20	72	0
n-Propylbenzene	2.119	2.23	-	-5.2	20	79	0
1,4-Dichlorobutane	0.388	0.441	-	-13.7	20	91	0
1,1,2,2-Tetrachloroethane	0.334	0.356	-	-6.6	20	82	0
4-Ethyltoluene	1.814	1.785	-	1.6	20	78	0
2-Chlorotoluene	1.426	1.522	-	-6.7	20	79	0
1,3,5-Trimethylbenzene	1.513	1.569	-	-3.7	20	77	0
1,2,3-Trichloropropane	0.258	0.274	-	-6.2	20	81	0
trans-1,4-Dichloro-2-buten	0.077	0.096	-	-24.7*	20	97	0
4-Chlorotoluene	1.249	1.32	-	-5.7	20	79	0
tert-Butylbenzene	1.421	1.326	-	6.7	20	74	0
1,2,4-Trimethylbenzene	1.544	1.501	-	2.8	20	77	0
sec-Butylbenzene	10	9.622	-	3.8	20	76	0
p-Isopropyltoluene	10	9.431	-	5.7	20	75	0
1,3-Dichlorobenzene	0.758	0.742	-	2.1	20	68	0
1,4-Dichlorobenzene	0.989	0.962	-	2.7	20	73	0

*** Value outside of QC limits.**

Calibration Verification Summary
Form 7
Volatiles

Client	: GZA GeoEnvironmental, Inc.		**Lab Number**	: L2433707	
Project Name	: BARNSTABLE		**Project Number**	: 01.0177641.00	
Instrument ID	: VOA116		**Calibration Date**	: 06/20/24 09:00	
Lab File ID	: V16240620A01		**Init. Calib. Date(s)**	: 05/31/24	06/01/24
Sample No	: WG1937457-2		**Init. Calib. Times**	: 23:29	03:27
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
p-Diethylbenzene	1.059	0.963	-	9.1	20	75	0
n-Butylbenzene	10	9.69	-	3.1	20	79	0
1,2-Dichlorobenzene	0.883	0.866	-	1.9	20	73	0
1,2,4,5-Tetramethylbenzene	10	8.999	-	10	20	75	0
1,2-Dibromo-3-chloropropan	10	8.799	-	12	20	75	0
1,3,5-Trichlorobenzene	0.694	0.663	-	4.5	20	72	0
Hexachlorobutadiene	0.297	0.257	-	13.5	20	66	0
1,2,4-Trichlorobenzene	10	8.914	-	10.9	20	68	0
Naphthalene	10	8.147	-	18.5	20	68	0
1,2,3-Trichlorobenzene	0.501	0.452	-	9.8	20	67	0

*** Value outside of QC limits.**

ANALYTICAL REPORT

Lab Number:	L2433722
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Jennifer McKechnie
Phone:	(781) 278-3864
Project Name:	BARNSTABLE
Project Number:	01.0177641.00
Report Date:	08/13/24

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433722
Report Date: 08/13/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2433722-01	MW-13D	WATER	155 S. FLINT ROCK ROAD	06/13/24 10:50	06/14/24
L2433722-02	MW-21	WATER	155 S. FLINT ROCK ROAD	06/13/24 11:55	06/14/24
L2433722-03	MW-32	WATER	155 S. FLINT ROCK ROAD	06/13/24 12:00	06/14/24
L2433722-04	MW-307S	WATER	155 S. FLINT ROCK ROAD	06/13/24 14:45	06/14/24
L2433722-05	MW-307D	WATER	155 S. FLINT ROCK ROAD	06/13/24 13:45	06/14/24
L2433722-06	MW-308S	WATER	155 S. FLINT ROCK ROAD	06/13/24 13:55	06/14/24
L2433722-07	MW-308D	WATER	155 S. FLINT ROCK ROAD	06/13/24 14:50	06/14/24
L2433722-08	MW-309	WATER	155 S. FLINT ROCK ROAD	06/13/24 15:55	06/14/24
L2433722-09	MW-404S	WATER	155 S. FLINT ROCK ROAD	06/13/24 16:00	06/14/24
L2433722-10	MW-404D	WATER	155 S. FLINT ROCK ROAD	06/13/24 14:50	06/14/24
L2433722-11	MW-407S	WATER	155 S. FLINT ROCK ROAD	06/13/24 10:55	06/14/24
L2433722-12	MW-407D	WATER	155 S. FLINT ROCK ROAD	06/13/24 11:50	06/14/24
L2433722-13	PC-6A	WATER	155 S. FLINT ROCK ROAD	06/13/24 10:15	06/14/24
L2433722-14	PC-19	WATER	155 S. FLINT ROCK ROAD	06/13/24 09:15	06/14/24
L2433722-15	PC-33	WATER	155 S. FLINT ROCK ROAD	06/13/24 08:55	06/14/24
L2433722-16	WS-101	WATER	155 S. FLINT ROCK ROAD	06/13/24 15:55	06/14/24

Project Name:	BARNSTABLE	**Lab Number:**	L2433722
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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: BARNSTABLE **Lab Number:** L2433722
Project Number: 01.0177641.00 **Report Date:** 08/13/24

Case Narrative (continued)

Report Revision

August 13, 2024: At the client's request, all non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Perfluorinated Alkyl Acids by 1633

L2433722-02: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

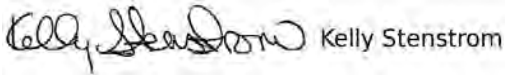
L2433722-02 and -14: The sample was re-analyzed on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

L2433722-13, -14, and -15: The sample has elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix.

The WG1940434-4 MS/MSD recoveries, performed on L2433722-01, are outside the acceptance criteria for perfluorohexanesulfonic acid (pfhxs) (0%), perfluoroheptanesulfonic acid (pfhps) (159%), perfluorooctanesulfonic acid (pfos) (0%), and perfluorononanesulfonic acid (pfns) (152%).

The WG1940434-5 MS/MSD recoveries, performed on L2433722-01, are outside the acceptance criteria for perfluorohexanesulfonic acid (pfhxs) (0%), perfluoroheptanesulfonic acid (pfhps) (172%), and perfluorododecane sulfonic acid (pfdods) (169%).

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:  Kelly Stenstrom

Title: Technical Director/Representative Date: 08/13/24

ORGANICS

SEMIVOLATILES

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-01
Client ID: MW-13D
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/13/24 10:50
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 09:11
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	12.8		ng/l	5.99	0.959	1
Perfluoropentanoic Acid (PFPeA)	28.4		ng/l	3.00	0.802	1
Perfluorobutanesulfonic Acid (PFBS)	3.72		ng/l	1.50	0.502	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.99	1.56	1
Perfluorohexanoic Acid (PFHxA)	25.2		ng/l	1.50	0.442	1
Perfluoropentanesulfonic Acid (PFPeS)	7.60		ng/l	1.50	0.262	1
Perfluoroheptanoic Acid (PFHpA)	16.9		ng/l	1.50	0.300	1
Perfluorohexanesulfonic Acid (PFHxS)	186		ng/l	1.50	0.360	1
Perfluorooctanoic Acid (PFOA)	28.6		ng/l	1.50	0.652	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	10.4		ng/l	5.99	2.02	1
Perfluoroheptanesulfonic Acid (PFHpS)	3.51		ng/l	1.50	0.404	1
Perfluorononanoic Acid (PFNA)	16.5		ng/l	1.50	0.472	1
Perfluorooctanesulfonic Acid (PFOS)	287		ng/l	1.50	0.682	1
Perfluorodecanoic Acid (PFDA)	4.43		ng/l	1.50	0.607	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	3.38	J	ng/l	5.99	2.33	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.50	0.464	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.50	0.817	1
Perfluoroundecanoic Acid (PFUnA)	8.78		ng/l	1.50	0.652	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.50	0.345	1
Perfluorooctanesulfonamide (PFOSA)	1.60		ng/l	1.50	0.404	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.50	0.809	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.50	0.689	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.50	0.562	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.50	0.397	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.99	0.839	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.99	0.944	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.50	0.569	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-01 Date Collected: 06/13/24 10:50

Client ID: MW-13D Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.99	1.24	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.99	1.24	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.50	0.652	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.50	0.689	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.0	3.52	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.0	1.84	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.00	0.427	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.00	0.397	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.00	0.330	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.00	1.77	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.49	2.47	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.4	8.76	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.4	5.91	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-01 Date Collected: 06/13/24 10:50

Client ID: MW-13D Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	71		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	81		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	81		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	113		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	73		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	77		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	72		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	70		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	97		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	74		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	61		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	61		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	63		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	110		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	52		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	73		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	83		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	56		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	50		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	70		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	67		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	84		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	79		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	83		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-02
Client ID: MW-21
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/13/24 11:55
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 15:38
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	24.8		ng/l	5.79	0.926	1
Perfluoropentanoic Acid (PFPeA)	72.2		ng/l	2.90	0.774	1
Perfluorobutanesulfonic Acid (PFBS)	9.16		ng/l	1.45	0.485	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.79	1.51	1
Perfluorohexanoic Acid (PFHxA)	66.7		ng/l	1.45	0.427	1
Perfluoropentanesulfonic Acid (PFPeS)	10.5		ng/l	1.45	0.253	1
Perfluoroheptanoic Acid (PFHpA)	43.0		ng/l	1.45	0.290	1
Perfluorohexanesulfonic Acid (PFHxS)	217		ng/l	1.45	0.347	1
Perfluorooctanoic Acid (PFOA)	46.0		ng/l	1.45	0.630	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	10.6		ng/l	5.79	1.95	1
Perfluoroheptanesulfonic Acid (PFHpS)	5.89		ng/l	1.45	0.391	1
Perfluorononanoic Acid (PFNA)	55.0		ng/l	1.45	0.456	1
Perfluorooctanesulfonic Acid (PFOS)	879	E	ng/l	1.45	0.659	1
Perfluorodecanoic Acid (PFDA)	21.3		ng/l	1.45	0.586	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	45.9		ng/l	5.79	2.25	1
Perfluorononanesulfonic Acid (PFNS)	1.18	J	ng/l	1.45	0.449	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.45	0.789	1
Perfluoroundecanoic Acid (PFUnA)	58.0		ng/l	1.45	0.630	1
Perfluorodecanesulfonic Acid (PFDS)	0.825	J	ng/l	1.45	0.333	1
Perfluorooctanesulfonamide (PFOSA)	112		ng/l	1.45	0.391	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.45	0.782	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.45	0.666	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.45	0.543	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.45	0.384	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.79	0.811	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.79	0.912	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.45	0.550	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-02 Date Collected: 06/13/24 11:55

Client ID: MW-21 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.79	1.19	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.79	1.19	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.45	0.630	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.45	0.666	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.5	3.40	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.5	1.77	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.90	0.413	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.90	0.384	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.90	0.318	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.90	1.71	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.24	2.39	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.2	8.47	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.2	5.71	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-02 Date Collected: 06/13/24 11:55

Client ID: MW-21 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	92		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	84		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	109		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	192		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	101		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	85		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	90		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	121		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	104		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	84		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	83		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	76		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	70		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	**202**	Q	10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	64		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	73		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	70		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	61		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	48		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	76		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	65		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	71		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	61		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	68		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-02 D
Client ID: MW-21
Sample Location: 155 S. FLINT ROCK ROAD

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 15:50
Analyst: AC

Date Collected: 06/13/24 11:55
Date Received: 06/14/24
Field Prep: Not Specified

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	998		ng/l	7.24	3.29	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	68		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-03
Client ID: MW-32
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/13/24 12:00
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 10:02
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.03	0.965	1
Perfluoropentanoic Acid (PFPeA)	2.37	J	ng/l	3.01	0.806	1
Perfluorobutanesulfonic Acid (PFBS)	1.07	J	ng/l	1.51	0.505	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.03	1.58	1
Perfluorohexanoic Acid (PFHxA)	2.13		ng/l	1.51	0.445	1
Perfluoropentanesulfonic Acid (PFPeS)	1.32	J	ng/l	1.51	0.264	1
Perfluoroheptanoic Acid (PFHpA)	1.24	J	ng/l	1.51	0.301	1
Perfluorohexanesulfonic Acid (PFHxS)	32.4		ng/l	1.51	0.362	1
Perfluorooctanoic Acid (PFOA)	5.85		ng/l	1.51	0.656	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.03	2.03	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.51	0.407	1
Perfluorononanoic Acid (PFNA)	1.25	J	ng/l	1.51	0.475	1
Perfluorooctanesulfonic Acid (PFOS)	58.9		ng/l	1.51	0.686	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.51	0.610	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.03	2.34	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.51	0.467	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.51	0.821	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.51	0.656	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.51	0.347	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.51	0.407	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.51	0.814	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.51	0.693	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.51	0.565	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.51	0.399	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.03	0.844	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.03	0.950	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.51	0.573	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-03 Date Collected: 06/13/24 12:00

Client ID: MW-32 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.03	1.24	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.03	1.24	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.51	0.656	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.51	0.693	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.1	3.54	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.1	1.85	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.01	0.430	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.01	0.399	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.01	0.332	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.01	1.78	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.54	2.49	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.7	8.82	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.7	5.95	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-03 Date Collected: 06/13/24 12:00

Client ID: MW-32 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	70		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	69		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	76		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	180		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	72		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	72		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	72		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	71		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	90		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	67		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	62		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	53		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	62		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	109		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	52		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	61		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	73		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	58		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	49		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	62		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	58		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	59		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	64		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	66		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-04
Client ID: MW-307S
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/13/24 14:45
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 10:15
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	5.95	0.952	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.98	0.796	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.49	0.498	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.95	1.55	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.49	0.439	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.49	0.260	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.49	0.298	1
Perfluorohexanesulfonic Acid (PFHxS)	0.536	J	ng/l	1.49	0.357	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.49	0.647	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.95	2.01	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.49	0.402	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.49	0.469	1
Perfluorooctanesulfonic Acid (PFOS)	0.818	J	ng/l	1.49	0.677	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.49	0.602	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.95	2.31	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.49	0.461	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.49	0.811	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.49	0.647	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.49	0.342	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.49	0.402	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.49	0.803	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.49	0.684	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.49	0.558	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.49	0.394	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.95	0.833	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.95	0.937	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.49	0.565	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-04 Date Collected: 06/13/24 14:45

Client ID: MW-307S Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.95	1.23	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.95	1.23	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.49	0.647	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.49	0.684	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.9	3.50	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.9	1.82	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.98	0.424	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.98	0.394	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.98	0.327	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.98	1.76	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.44	2.45	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.2	8.70	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.2	5.87	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-04 Date Collected: 06/13/24 14:45

Client ID: MW-307S Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	54		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	64		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	60		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	72		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	62		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	62		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	60		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	58		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	68		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	56		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	55		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	57		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	48		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	90		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	50		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	57		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	64		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	53		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	42		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	58		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	67		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	65		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	62		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	66		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-05
Client ID: MW-307D
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/13/24 13:45
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 10:28
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.15	0.984	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.07	0.822	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.54	0.515	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.15	1.61	1
Perfluorohexanoic Acid (PFHxA)	0.507	JF	ng/l	1.54	0.453	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.54	0.269	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.54	0.307	1
Perfluorohexanesulfonic Acid (PFHxS)	0.830	J	ng/l	1.54	0.369	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.54	0.668	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.15	2.07	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.54	0.415	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.54	0.484	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.54	0.699	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.54	0.622	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.15	2.39	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.54	0.476	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.54	0.838	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.54	0.668	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.54	0.353	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.54	0.415	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.54	0.830	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.54	0.707	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.54	0.576	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.54	0.407	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.15	0.861	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.15	0.968	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.54	0.584	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-05 Date Collected: 06/13/24 13:45

Client ID: MW-307D Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.15	1.27	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.15	1.27	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.54	0.668	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.54	0.707	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.4	3.61	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.4	1.88	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.07	0.438	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.07	0.407	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.07	0.338	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.07	1.81	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.68	2.54	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	38.4	8.99	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	38.4	6.06	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-05 Date Collected: 06/13/24 13:45

Client ID: MW-307D Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	76		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	93		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	84		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	86		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	85		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	81		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	81		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	87		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	78		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	70		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	74		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	59		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	123		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	62		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	65		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	80		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	69		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	58		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	80		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	77		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	76		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	74		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	77		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-06
Client ID: MW-308S
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/13/24 13:55
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 10:41
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	5.83	0.933	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.92	0.780	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.46	0.488	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.83	1.52	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.46	0.430	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.46	0.255	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.46	0.292	1
Perfluorohexanesulfonic Acid (PFHxS)	0.423	JF	ng/l	1.46	0.350	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.46	0.634	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.83	1.97	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.46	0.394	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.46	0.459	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.46	0.664	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.46	0.591	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.83	2.27	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.46	0.452	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.46	0.795	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.46	0.634	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.46	0.335	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.46	0.394	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.46	0.787	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.46	0.671	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.46	0.547	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.46	0.386	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.83	0.817	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.83	0.919	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.46	0.554	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-06 Date Collected: 06/13/24 13:55

Client ID: MW-308S Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.83	1.20	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.83	1.20	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.46	0.634	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.46	0.671	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.6	3.43	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.6	1.79	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.92	0.416	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.92	0.386	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.92	0.321	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.92	1.72	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.29	2.41	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.4	8.53	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.4	5.75	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-06 Date Collected: 06/13/24 13:55

Client ID: MW-308S Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	73		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	86		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	80		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	118		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	81		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	80		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	85		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	74		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	86		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	80		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	69		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	69		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	65		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	109		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	61		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	61		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	76		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	62		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	57		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	73		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	71		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	71		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	72		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	74		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-07
Client ID: MW-308D
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/13/24 14:50
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 10:54
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	5.84	0.934	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.92	0.781	1
Perfluorobutanesulfonic Acid (PFBS)	0.679	J	ng/l	1.46	0.489	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.84	1.52	1
Perfluorohexanoic Acid (PFHxA)	0.452	JF	ng/l	1.46	0.431	1
Perfluoropentanesulfonic Acid (PFPeS)	0.299	J	ng/l	1.46	0.255	1
Perfluoroheptanoic Acid (PFHpA)	0.306	J	ng/l	1.46	0.292	1
Perfluorohexanesulfonic Acid (PFHxS)	2.55		ng/l	1.46	0.350	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.46	0.635	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.84	1.97	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.46	0.394	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.46	0.460	1
Perfluorooctanesulfonic Acid (PFOS)	4.75		ng/l	1.46	0.664	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.46	0.591	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.84	2.27	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.46	0.452	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.46	0.796	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.46	0.635	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.46	0.336	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.46	0.394	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.46	0.788	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.46	0.672	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.46	0.547	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.46	0.387	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.84	0.818	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.84	0.920	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.46	0.555	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-07 Date Collected: 06/13/24 14:50

Client ID: MW-308D Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.84	1.20	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.84	1.20	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.46	0.635	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.46	0.672	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.6	3.43	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.6	1.79	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.92	0.416	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.92	0.387	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.92	0.321	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.92	1.72	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.30	2.41	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.5	8.54	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.5	5.76	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-07 Date Collected: 06/13/24 14:50

Client ID: MW-308D Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	75		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	86		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	80		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	88		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	82		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	84		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	86		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	78		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	85		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	75		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	74		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	73		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	59		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	123		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	67		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	70		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	82		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	67		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	55		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	78		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	79		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	87		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	79		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	81		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-08
Client ID: MW-309
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/13/24 15:55
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 11:07
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	5.87	0.938	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.93	0.784	1
Perfluorobutanesulfonic Acid (PFBS)	0.982	J	ng/l	1.47	0.491	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.87	1.53	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.47	0.433	1
Perfluoropentanesulfonic Acid (PFPeS)	0.931	J	ng/l	1.47	0.257	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.47	0.293	1
Perfluorohexanesulfonic Acid (PFHxS)	9.53		ng/l	1.47	0.352	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.47	0.638	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.87	1.98	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.990	J	ng/l	1.47	0.396	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.47	0.462	1
Perfluorooctanesulfonic Acid (PFOS)	13.8		ng/l	1.47	0.667	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.47	0.594	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.87	2.28	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.47	0.455	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.47	0.799	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.47	0.638	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.47	0.337	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.47	0.396	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.47	0.792	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.47	0.674	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.47	0.550	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.47	0.389	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.87	0.821	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.87	0.924	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.47	0.557	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-08 Date Collected: 06/13/24 15:55

Client ID: MW-309 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.87	1.21	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.87	1.21	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.47	0.638	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.47	0.674	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.7	3.45	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.7	1.80	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.93	0.418	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.93	0.389	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.93	0.323	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.93	1.73	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.33	2.42	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.7	8.58	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.7	5.78	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-08 Date Collected: 06/13/24 15:55

Client ID: MW-309 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	81		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	97		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	95		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	99		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	90		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	88		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	94		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	88		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	98		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	82		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	76		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	66		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	122		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	75		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	70		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	89		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	71		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	54		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	85		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	78		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	83		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	76		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	78		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-09
Client ID: MW-404S
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/13/24 16:00
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 11:19
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.29	J	ng/l	6.51	1.04	1
Perfluoropentanoic Acid (PFPeA)	1.50	J	ng/l	3.25	0.870	1
Perfluorobutanesulfonic Acid (PFBS)	2.33		ng/l	1.63	0.545	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.51	1.70	1
Perfluorohexanoic Acid (PFHxA)	6.45		ng/l	1.63	0.480	1
Perfluoropentanesulfonic Acid (PFPeS)	3.97		ng/l	1.63	0.285	1
Perfluoroheptanoic Acid (PFHpA)	1.52	J	ng/l	1.63	0.325	1
Perfluorohexanesulfonic Acid (PFHxS)	73.0		ng/l	1.63	0.390	1
Perfluorooctanoic Acid (PFOA)	3.63		ng/l	1.63	0.708	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.51	2.20	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.63	0.439	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.63	0.512	1
Perfluorooctanesulfonic Acid (PFOS)	1.46	J	ng/l	1.63	0.740	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.63	0.659	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.51	2.53	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.63	0.504	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.63	0.887	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.63	0.708	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.63	0.374	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.63	0.439	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.63	0.878	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.63	0.748	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.63	0.610	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.63	0.431	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.51	0.911	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.51	1.02	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.63	0.618	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-09 Date Collected: 06/13/24 16:00

Client ID: MW-404S Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.51	1.34	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.51	1.34	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.63	0.708	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.63	0.748	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.3	3.82	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.3	1.99	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.25	0.464	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.25	0.431	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.25	0.358	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.25	1.92	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.14	2.68	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.7	9.52	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.7	6.42	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-09 Date Collected: 06/13/24 16:00

Client ID: MW-404S Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	77		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	89		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	90		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	128		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	86		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	85		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	89		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	79		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	101		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	79		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	77		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	68		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	69		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	104		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	64		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	69		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	83		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	64		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	49		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	77		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	75		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	79		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	74		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	75		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-10
Client ID: MW-404D
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/13/24 14:50
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 11:32
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	6.13	J	ng/l	6.57	1.05	1
Perfluoropentanoic Acid (PFPeA)	15.4		ng/l	3.28	0.878	1
Perfluorobutanesulfonic Acid (PFBS)	1.32	J	ng/l	1.64	0.550	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.57	1.72	1
Perfluorohexanoic Acid (PFHxA)	12.5		ng/l	1.64	0.484	1
Perfluoropentanesulfonic Acid (PFPeS)	2.09		ng/l	1.64	0.287	1
Perfluoroheptanoic Acid (PFHpA)	5.98		ng/l	1.64	0.328	1
Perfluorohexanesulfonic Acid (PFHxS)	39.2		ng/l	1.64	0.394	1
Perfluorooctanoic Acid (PFOA)	8.61		ng/l	1.64	0.714	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	5.76	J	ng/l	6.57	2.22	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.19	J	ng/l	1.64	0.443	1
Perfluorononanoic Acid (PFNA)	2.05		ng/l	1.64	0.517	1
Perfluorooctanesulfonic Acid (PFOS)	131		ng/l	1.64	0.747	1
Perfluorodecanoic Acid (PFDA)	1.77		ng/l	1.64	0.665	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.57	2.55	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.64	0.509	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.64	0.895	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.64	0.714	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.64	0.378	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.64	0.443	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.64	0.887	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.64	0.755	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.64	0.616	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.64	0.435	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.57	0.919	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.57	1.03	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.64	0.624	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-10 Date Collected: 06/13/24 14:50

Client ID: MW-404D Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.57	1.35	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.57	1.35	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.64	0.714	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.64	0.755	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.4	3.86	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.4	2.01	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.28	0.468	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.28	0.435	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.28	0.361	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.28	1.94	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.21	2.71	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	41.0	9.60	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	41.0	6.48	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-10 Date Collected: 06/13/24 14:50

Client ID: MW-404D Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	78		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	89		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	89		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	98		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	81		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	84		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	83		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	81		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	94		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	75		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	70		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	65		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	59		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	108		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	61		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	69		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	89		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	64		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	55		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	77		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	77		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	81		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	77		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	78		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-11
Client ID: MW-407S
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/13/24 10:55
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 12:35
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.19	0.990	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.09	0.827	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.55	0.518	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.19	1.62	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.55	0.456	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.55	0.271	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.55	0.309	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.55	0.371	1
Perfluorooctanoic Acid (PFOA)	0.974	J	ng/l	1.55	0.673	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.19	2.09	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.55	0.418	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.55	0.487	1
Perfluorooctanesulfonic Acid (PFOS)	0.735	J	ng/l	1.55	0.704	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.55	0.626	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.19	2.40	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.55	0.479	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.55	0.843	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.55	0.673	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.55	0.356	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.55	0.418	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.55	0.835	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.55	0.711	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.55	0.580	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.55	0.410	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.19	0.866	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.19	0.974	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.55	0.588	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-11 Date Collected: 06/13/24 10:55

Client ID: MW-407S Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.19	1.28	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.19	1.28	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.55	0.673	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.55	0.711	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.5	3.63	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.5	1.89	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.09	0.441	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.09	0.410	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.09	0.340	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.09	1.82	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.73	2.55	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	38.7	9.05	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	38.7	6.10	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-11 Date Collected: 06/13/24 10:55

Client ID: MW-407S Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	76		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	86		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	82		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	95		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	83		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	89		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	83		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	77		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	89		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	79		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	75		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	78		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	53		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	115		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	67		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	68		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	81		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	62		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	50		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	80		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	71		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	73		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	73		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	74		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-12
Client ID: MW-407D
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/13/24 11:50
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 12:48
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.26	1.00	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.13	0.837	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.56	0.524	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.26	1.63	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.56	0.461	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.56	0.274	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.56	0.313	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.56	0.375	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.56	0.680	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	6.16	J	ng/l	6.26	2.11	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.56	0.422	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.56	0.493	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.56	0.712	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.56	0.633	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.26	2.43	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.56	0.485	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.56	0.852	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.56	0.680	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.56	0.360	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.56	0.422	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.56	0.844	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.56	0.719	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.56	0.586	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.56	0.414	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.26	0.876	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.26	0.985	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.56	0.594	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-12 Date Collected: 06/13/24 11:50

Client ID: MW-407D Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.26	1.29	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.26	1.29	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.56	0.680	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.56	0.719	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.6	3.68	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.6	1.92	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.13	0.446	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.13	0.414	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.13	0.344	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.13	1.84	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.82	2.58	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	39.1	9.15	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	39.1	6.17	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-12 Date Collected: 06/13/24 11:50

Client ID: MW-407D Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	73		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	82		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	79		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	89		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	80		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	79		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	79		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	77		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	88		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	77		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	69		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	75		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	67		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	104		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	59		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	66		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	90		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	70		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	52		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	74		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	73		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	75		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	74		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	73		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-13
Client ID: PC-6A
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/13/24 10:15
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 13:01
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	10.2	J	ng/l	12.8	2.05	1
Perfluoropentanoic Acid (PFPeA)	24.2		ng/l	6.40	1.71	1
Perfluorobutanesulfonic Acid (PFBS)	3.76		ng/l	3.20	1.07	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	12.8	3.34	1
Perfluorohexanoic Acid (PFHxA)	26.0		ng/l	3.20	0.944	1
Perfluoropentanesulfonic Acid (PFPeS)	6.72		ng/l	3.20	0.560	1
Perfluoroheptanoic Acid (PFHpA)	23.8		ng/l	3.20	0.640	1
Perfluorohexanesulfonic Acid (PFHxS)	61.1		ng/l	3.20	0.768	1
Perfluorooctanoic Acid (PFOA)	21.3		ng/l	3.20	1.39	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	11.3	J	ng/l	12.8	4.32	1
Perfluoroheptanesulfonic Acid (PFHpS)	4.69		ng/l	3.20	0.864	1
Perfluorononanoic Acid (PFNA)	44.5		ng/l	3.20	1.01	1
Perfluorooctanesulfonic Acid (PFOS)	467		ng/l	3.20	1.46	1
Perfluorodecanoic Acid (PFDA)	9.23		ng/l	3.20	1.30	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	6.83	J	ng/l	12.8	4.98	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	3.20	0.992	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	3.20	1.74	1
Perfluoroundecanoic Acid (PFUnA)	52.4		ng/l	3.20	1.39	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	3.20	0.736	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	3.20	0.864	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	3.20	1.73	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	3.20	1.47	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	3.20	1.20	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	3.20	0.848	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	12.8	1.79	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	12.8	2.02	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	3.20	1.22	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-13 Date Collected: 06/13/24 10:15

Client ID: PC-6A Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	12.8	2.64	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	12.8	2.64	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	3.20	1.39	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	3.20	1.47	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	32.0	7.52	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	32.0	3.92	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	6.40	0.912	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	6.40	0.848	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	6.40	0.704	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	6.40	3.78	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	16.0	5.28	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	80.0	18.7	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	80.0	12.6	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-13 Date Collected: 06/13/24 10:15

Client ID: PC-6A Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	76		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	88		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	84		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	104		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	80		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	79		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	79		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	78		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	95		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	76		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	78		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	82		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	78		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	142		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	72		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	79		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	115		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	78		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	67		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	74		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	80		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	87		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	90		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	92		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-14
Client ID: PC-19
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/13/24 09:15
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 13:13
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	61.0		ng/l	12.8	2.05	1
Perfluoropentanoic Acid (PFPeA)	187		ng/l	6.40	1.71	1
Perfluorobutanesulfonic Acid (PFBS)	34.6		ng/l	3.20	1.07	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	12.8	3.34	1
Perfluorohexanoic Acid (PFHxA)	142		ng/l	3.20	0.944	1
Perfluoropentanesulfonic Acid (PFPeS)	70.8		ng/l	3.20	0.560	1
Perfluoroheptanoic Acid (PFHpA)	74.6		ng/l	3.20	0.640	1
Perfluorohexanesulfonic Acid (PFHxS)	522		ng/l	3.20	0.768	1
Perfluorooctanoic Acid (PFOA)	125		ng/l	3.20	1.39	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	39.3		ng/l	12.8	4.32	1
Perfluoroheptanesulfonic Acid (PFHpS)	47.3		ng/l	3.20	0.864	1
Perfluorononanoic Acid (PFNA)	179		ng/l	3.20	1.01	1
Perfluorooctanesulfonic Acid (PFOS)	1200	E	ng/l	3.20	1.46	1
Perfluorodecanoic Acid (PFDA)	6.69		ng/l	3.20	1.30	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	7.90	J	ng/l	12.8	4.98	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	3.20	0.992	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	3.20	1.74	1
Perfluoroundecanoic Acid (PFUnA)	10.7		ng/l	3.20	1.39	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	3.20	0.736	1
Perfluorooctanesulfonamide (PFOSA)	3.36		ng/l	3.20	0.864	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	3.20	1.73	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	3.20	1.47	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	3.20	1.20	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	3.20	0.848	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	12.8	1.79	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	12.8	2.02	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	3.20	1.22	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-14 Date Collected: 06/13/24 09:15

Client ID: PC-19 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	12.8	2.64	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	12.8	2.64	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	3.20	1.39	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	3.20	1.47	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	32.0	7.52	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	32.0	3.92	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	6.40	0.912	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	6.40	0.848	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	6.40	0.704	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	6.40	3.78	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	16.0	5.28	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	80.0	18.7	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	80.0	12.6	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-14 Date Collected: 06/13/24 09:15

Client ID: PC-19 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	82		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	86		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	100		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	131		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	79		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	82		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	89		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	79		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	111		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	91		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	81		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	77		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	88		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	140		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	77		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	82		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	103		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	74		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	64		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	77		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	88		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	95		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	90		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	94		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-14 D
Client ID: PC-19
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/13/24 09:15
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 15:21
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	1240		ng/l	16.0	7.28	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	85		32-114

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-15
Client ID: PC-33
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/13/24 08:55
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 13:26
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	20.1		ng/l	12.8	2.05	1
Perfluoropentanoic Acid (PFPeA)	70.1		ng/l	6.40	1.71	1
Perfluorobutanesulfonic Acid (PFBS)	9.39		ng/l	3.20	1.07	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	12.8	3.34	1
Perfluorohexanoic Acid (PFHxA)	69.5		ng/l	3.20	0.944	1
Perfluoropentanesulfonic Acid (PFPeS)	13.1		ng/l	3.20	0.560	1
Perfluoroheptanoic Acid (PFHpA)	36.4		ng/l	3.20	0.640	1
Perfluorohexanesulfonic Acid (PFHxS)	100		ng/l	3.20	0.768	1
Perfluorooctanoic Acid (PFOA)	35.6		ng/l	3.20	1.39	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	25.3		ng/l	12.8	4.32	1
Perfluoroheptanesulfonic Acid (PFHpS)	7.65		ng/l	3.20	0.864	1
Perfluorononanoic Acid (PFNA)	46.5		ng/l	3.20	1.01	1
Perfluorooctanesulfonic Acid (PFOS)	476		ng/l	3.20	1.46	1
Perfluorodecanoic Acid (PFDA)	4.32		ng/l	3.20	1.30	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	5.55	J	ng/l	12.8	4.98	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	3.20	0.992	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	3.20	1.74	1
Perfluoroundecanoic Acid (PFUnA)	17.2		ng/l	3.20	1.39	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	3.20	0.736	1
Perfluorooctanesulfonamide (PFOSA)	10.0		ng/l	3.20	0.864	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	3.20	1.73	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	3.20	1.47	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	3.20	1.20	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	3.20	0.848	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	12.8	1.79	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	12.8	2.02	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	3.20	1.22	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-15 Date Collected: 06/13/24 08:55

Client ID: PC-33 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	12.8	2.64	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	12.8	2.64	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	3.20	1.39	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	3.20	1.47	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	32.0	7.52	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	32.0	3.92	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	6.40	0.912	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	6.40	0.848	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	6.40	0.704	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	6.40	3.78	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	16.0	5.28	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	80.0	18.7	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	80.0	12.6	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-15 Date Collected: 06/13/24 08:55

Client ID: PC-33 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	79		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	88		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	87		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	102		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	82		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	86		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	84		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	83		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	94		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	78		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	83		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	70		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	120		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	78		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	80		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	94		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	83		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	65		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	77		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	92		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	92		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	85		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	90		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-16
Client ID: WS-101
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/13/24 15:55
Date Received: 06/14/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/28/24 13:39
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.01	0.962	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.01	0.804	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.50	0.504	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.01	1.57	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.50	0.443	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.50	0.263	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.50	0.301	1
Perfluorohexanesulfonic Acid (PFHxS)	1.12	J	ng/l	1.50	0.361	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.50	0.654	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.01	2.03	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.50	0.406	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.50	0.474	1
Perfluorooctanesulfonic Acid (PFOS)	1.98		ng/l	1.50	0.684	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.50	0.609	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.01	2.34	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.50	0.466	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.50	0.819	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.50	0.654	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.50	0.346	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.50	0.406	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.50	0.812	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.50	0.692	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.50	0.564	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.50	0.398	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.01	0.842	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.01	0.947	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.50	0.571	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-16 Date Collected: 06/13/24 15:55

Client ID: WS-101 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.01	1.24	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.01	1.24	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.50	0.654	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.50	0.692	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.0	3.53	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.0	1.84	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.01	0.428	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.01	0.398	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.01	0.331	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.01	1.77	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.52	2.48	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.6	8.79	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.6	5.93	1

Project Name: BARNSTABLE **Lab Number:** L2433722

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433722-16 Date Collected: 06/13/24 15:55

Client ID: WS-101 Date Received: 06/14/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	46		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	54		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	53		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	68		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	52		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	52		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	53		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	49		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	52		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	42		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	51		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	43		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	28		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	84		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	40		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	43		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	52		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	43		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	38		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	49		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	51		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	54		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	49		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	55		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/28/24 08:32
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-16 Batch: WG1940434-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.40	1.02
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.20	0.856
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.60	0.536
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.40	1.67
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.60	0.472
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.60	0.280
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.60	0.320
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.60	0.384
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.60	0.696
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.40	2.16
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.60	0.432
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.60	0.504
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.60	0.728
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.648
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.40	2.49
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.496
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.872
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.696
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.368
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.432
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.864
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.736
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.600
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.424
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.40	0.896
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.40	1.01
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.608

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/28/24 08:32
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-16 Batch: WG1940434-1					
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.40	1.32
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.40	1.32
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.696
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.736
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.76
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.456
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.424
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.352
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	1.89
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.00	2.64
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.0	9.36
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.0	6.31

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433722
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/28/24 08:32
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/27/24 19:03

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-16 Batch: WG1940434-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	83		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	96		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	86		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	93		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	89		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	89		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	88		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	84		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	105		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	88		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	79		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	81		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	74		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	124		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	71		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	71		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	91		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	71		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	67		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	83		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	72		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	76		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	72		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	77		10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433722
Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16 Batch: WG1940434-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	115		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	119		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	118		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	126		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	130		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	128		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	123		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	108		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	129		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	121		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	102		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	110		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	112		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	143		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	117		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	110		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	111		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	126		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	104		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	117		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	119		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	116		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433722

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16 Batch: WG1940434-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	109		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	112		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	123		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	138		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	117		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	117		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	105		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	124		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	94		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	117		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	111		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	111		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	123		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	125		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	106		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	130		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	98		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	130		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433722

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16 Batch: WG1940434-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	67				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	77				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	70				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	77				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	69				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	73				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	70				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	68				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	85				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	74				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	66				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	68				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	57				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	102				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	62				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	65				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	77				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	67				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	68				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	68				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	66				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	71				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	68				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	70				10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433722
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16 Batch: WG1940434-3								
Perfluorobutanoic Acid (PFBA)	114		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	121		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	115		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	114		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	119		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	117		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	112		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	110		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	116		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	111		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	113		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	105		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	105		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	113		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	110		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	111		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	112		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	117		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	110		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	75		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	101		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	120		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433722
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16 Batch: WG1940434-3								
Perfluorotridecanoic Acid (PFTrDA)	115		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	115		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	113		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	119		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	113		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	104		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	102		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	108		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	103		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	104		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	108		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	128		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	110		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	108		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	96		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	116		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	100		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	132		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433722

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16 Batch: WG1940434-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	81				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	89				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	78				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	93				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	79				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	83				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	79				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	79				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	103				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	76				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	79				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	91				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	84				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	115				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	79				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	78				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	97				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	87				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	77				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	79				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	78				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	86				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	82				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	86				10-130

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433722
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16 QC Batch ID: WG1940434-4 WG1940434-5 QC Sample: L2433722-01 Client ID: MW-13D												
Perfluorobutanoic Acid (PFBA)	12.8	73.8	104	124		103	121		40-150	1		30
Perfluoropentanoic Acid (PFPeA)	28.4	36.9	74.8	126		73.8	122		40-150	1		30
Perfluorobutanesulfonic Acid (PFBS)	3.72	16.4	23.3	120		24.2	124		40-150	4		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	69.2	79.2	114		84.6	121		40-150	7		30
Perfluorohexanoic Acid (PFHxA)	25.2	18.4	44.4	104		45.6	110		40-150	3		30
Perfluoropentanesulfonic Acid (PFPeS)	7.60	17.4	27.5	115		28.2	118		40-150	3		30
Perfluoroheptanoic Acid (PFHpA)	16.9	18.4	37.0	109		38.0	113		40-150	3		30
Perfluorohexanesulfonic Acid (PFHxS)	186	16.9	175	**0**	Q	179	**0**	Q	40-150	2		30
Perfluorooctanoic Acid (PFOA)	28.6	18.4	49.6	114		47.0	99		40-150	5		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	10.4	70.1	91.4	115		102	129		40-150	11		30
Perfluoroheptanesulfonic Acid (PFHpS)	3.51	17.6	31.4	**159**	Q	34.1	**172**	Q	40-150	8		30
Perfluorononanoic Acid (PFNA)	16.5	18.4	39.0	122		37.0	110		40-150	5		30
Perfluorooctanesulfonic Acid (PFOS)	287	17.1	273	**0**	Q	296	52		40-150	8		30
Perfluorodecanoic Acid (PFDA)	4.43	18.4	29.0	133		28.3	128		40-150	2		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	3.38J	70.9	109	149		104	141		40-150	5		30
Perfluorononanesulfonic Acid (PFNS)	ND	17.8	27.0	**152**	Q	25.7	143		40-150	5		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	18.4	22.7	123		22.7	122		40-150	0		30
Perfluoroundecanoic Acid (PFUnA)	8.78	18.4	32.8	130		33.7	134		40-150	3		30
Perfluorodecanesulfonic Acid (PFDS)	ND	17.8	24.2	136		26.2	146		40-150	8		30
Perfluorooctanesulfonamide (PFOSA)	1.60	18.4	24.0	121		24.7	124		40-150	3		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	18.4	24.6	133		22.0	118		40-150	11		30
Perfluorododecanoic Acid (PFDoA)	ND	18.4	24.7	134		23.3	125		40-150	6		30

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433722
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16 QC Batch ID: WG1940434-4 WG1940434-5 QC Sample: L2433722-01 Client ID: MW-13D												
Perfluorotridecanoic Acid (PFTrDA)	ND	18.4	24.1	131		24.3	130		40-150	1		30
Perfluorotetradecanoic Acid (PFTeDA)	ND	18.4	22.5	122		24.7	133		40-150	9		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	73.8	87.8	119		87.8	118		40-150	0		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	69.8	87.2	125		88.1	125		40-150	1		30
Perfluorododecanesulfonic Acid (PFDoS)	ND	17.9	26.4	147		30.5	**169**	Q	40-150	14		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	69	71.0	103		66.5	96		40-150	7		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	69.8	66.5	95		63.2	90		40-150	5		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	18.4	23.3	126		22.2	119		40-150	5		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	18.4	21.0	114		22.2	119		40-150	6		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	184	213	115		210	113		40-150	1		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	184	223	121		215	115		40-150	4		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	36.9	48.8	132		51.0	137		40-150	4		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	36.9	42.2	114		43.0	115		40-150	2		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	32.8	37.7	115		39.5	119		40-150	5		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	36.9	35.6	96		38.9	104		40-150	9		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	92.3	115	125		111	119		40-150	4		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	461	488	106		499	107		40-150	2		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	461	639	138		576	124		40-150	10		30

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433722
Report Date: 08/13/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16 QC Batch ID: WG1940434-4 WG1940434-5 QC Sample: L2433722-01 Client ID: MW-13D												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	57		60		10-213
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	95		91		10-290
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	94		94		10-261
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	81		81		11-97
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	82		86		10-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	76		78		10-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	73		74		11-94
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	110		103		10-172
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	75		76		10-137
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	80		80		46-115
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	71		71		14-108
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	63		63		32-114
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	85		85		41-125
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	58		57		16-123
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	64		67		28-115
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	74		80		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	74		83		27-156
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	66		68		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	60		61		10-145
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	77		82		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	81		90		29-123
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	74		77		39-121
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	77		78		38-114

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433722

Report Date: 08/13/24

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-16 QC Batch ID: WG1940434-4 WG1940434-5 QC Sample: L2433722-01 Client ID: MW-13D												

Surrogate	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	73		80		35-142

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433722
Report Date: 08/13/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent
D	Absent
E	Absent
F	Absent
G	Absent
H	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2433722-01A	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-01B	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-01C	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-01D	Amber 1000ml HCl preserved	H	<2	<2	5.0	Y	Absent		HOLD-PETRO(7)
L2433722-01E	Amber 1000ml HCl preserved	H	<2	<2	5.0	Y	Absent		HOLD-PETRO(7)
L2433722-01F	Vial HCl preserved	H	NA		5.0	Y	Absent		HOLD-8260(14)
L2433722-01G	Vial HCl preserved	H	NA		5.0	Y	Absent		HOLD-8260(14)
L2433722-01H	Vial HCl preserved	H	NA		5.0	Y	Absent		HOLD-8260(14)
L2433722-01I	Vial HCl preserved	H	NA		5.0	Y	Absent		HOLD-8260(14)
L2433722-01J	Vial HCl preserved	H	NA		5.0	Y	Absent		HOLD-8260(14)
L2433722-01K	Vial HCl preserved	H	NA		5.0	Y	Absent		HOLD-8260(14)
L2433722-02A	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-02B	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-02C	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-03A	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2433722-03B	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-03C	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-04A	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-04B	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-04C	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-05A	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-05B	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-05C	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-06A	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-06B	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-06C	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-07A	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-07B	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-07C	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-08A	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-08B	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-08C	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-09A	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-09B	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-09C	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-10A	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-10B	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-10C	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-11A	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-11B	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-11C	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-12A	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-12B	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433722
Report Date: 08/13/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2433722-12C	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-13A	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-13B	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-13C	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-14A	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-14B	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-14C	Plastic 500ml unpreserved	H	NA		5.0	Y	Absent		A2-1633-DRAFT(28)
L2433722-15A	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-15B	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-15C	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-16A	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-16B	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)
L2433722-16C	Plastic 500ml unpreserved	G	NA		5.4	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433722
Report Date: 08/13/24

PFAS PARAMETER SUMMARY

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

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433722
Report Date: 08/13/24

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:	BARNSTABLE	**Lab Number:**	L2433722
Project Number:	01.0177641.00	**Report Date:**	08/13/24

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

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

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

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

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

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

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

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

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2433722
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Footnotes

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

Terms

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

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2433722
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

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

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

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration 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:	BARNSTABLE	**Lab Number:**	L2433722
Project Number:	01.0177641.00	**Report Date:**	08/13/24

REFERENCES

144 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. Draft EPA Method 1633, EPA Document 821-D-22-001, June 2022.

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

Mansfield Facility
SM 2540D: TSS.
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.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

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

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, 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 2

Date Rec'd in Lab: 6/17/24

ALPHA Job #: L2433722

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: GZA GeoEnvironmental, Inc.

Address: 249 Vanderbilt Avenue, Norwood, MA 02062

Phone: 781-589-3866

Email: Jennifer.McKechnie@gza.com; Rowan.Thompson@gza.com; Flora.Su@gza.com

Additional Project Information:

Project Information

Project Name: Barnstable

Project Location: 155 S. Flint Rock Rd

Project #: 01.0177641.00

Project Manager: Jennifer McKechnie

ALPHA Quote #: 27478

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)

Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods

☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)

☒ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)

☐ Yes ☒ No NPDES RGP

☐ Other State /Fed Program _____ Criteria _____

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☒ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☒ Ranges & Targets SIM	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint ☒ Ranges Only	PFAS: EPA 1633	Sample Comments	TOTAL # BOTTLES
33722-01	MW-13	6/13/24	10:50	GW	KC	X				X	X			X		11
-02	MW-21		11:55		OLB									X		3
-03	MW-32		12:00		KC									X		3
-04	MW-307S		14:45		KC									X		3
-05	MW-307D		13:45		KC									X		3
-06	MW-308S		13:55		OLB									X		3
-07	MW-308D		14:50		OLB									X		3
-08	MW-309		15:55		OLB									X		3
-09	MW-404S		16:00		~~KG~~ VER									X		3
-10	MW-404D		14:50		VER									X		3
	Container Type					V				A	V			P		
	Preservative					B				B	B			A		

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Flora Su	06/14/24 12:41	[illegible]	6/14 12:41
[illegible]	6/14 17:51	[illegible]	6/14 1751
[illegible]	06/17/24 1525	[illegible]	6/17 by 1525
[illegible]	6/17/24 1640	[illegible]	6/17/24 16:40

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 6/17/24

ALPHA Job #: L2433722

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: GZA GeoEnvironmental, Inc.
Address: 249 Vanderbilt Avenue, Norwood, MA 02062
Phone: 781-589-3866
Email: Jennifer.McKechnie@gza.com; Flora.Su@gza.com; Rowan.Thompson@gza.com
Additional Project Information:

Project Information

Project Name: Barnstable
Project Location: 155 S. Flint Rock Rd.
Project #: 01.0177641.00
Project Manager: Jennifer McKechnie
ALPHA Quote #: 274178

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☒ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	PFAS: EPA 1633	TOTAL # BOTTLES
33722-11	MW-407S	6/13/24	10:55	GW	VER	X	3
-12	MW-407D		11:50		VER	X	3
-13	PC-6A		10:15		OLB	X	3
-14	PC-19		09:15		KC	X	3
-15	PC-33		08:55		OLB	X	3
-16	WS-101		15:55		KC	X	3
						Container Type	P
						Preservative	A

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCRA5 ☐ RCRA8 ☐ RCP 15 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO
Filtration: ☐ Field ☐ Lab to do
Preservation: ☐ Lab to do
Sample Comments

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H= $Na_2S_2O_3$
I= Ascorbic Acid
J= NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Flora Su	06/14/24 12:41	ML	6/14 12:41
ML	6/14 17:51		6/17/24 1525
	6/17/24 1525	MLM	6/17/24 1525
	6/17/24 1440		6/17/24 16:40

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L2433960
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Jennifer McKechnie
Phone:	(781) 278-3864
Project Name:	BARNSTABLE
Project Number:	01.0177641.00
Report Date:	08/13/24

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0825), DoD (L2474), FL (E87814), IL (200081), IN (C-MA-04), KY (KY98046), LA (85084), ME (MA00030), MD (350), MI (9110), MN (025-999-495), NJ (MA015), NY (11627), NC (685), OR (MA-0262), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #525-23-107-88708A1), USFWS (Permit #A24920).

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

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433960
Report Date: 08/13/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2433960-01	PC-25	WATER	155 S. FLINT ROCK RD	06/14/24 15:05	06/17/24

Project Name:	BARNSTABLE	**Lab Number:**	L2433960
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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:	BARNSTABLE	**Lab Number:**	L2433960
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Case Narrative (continued)

Report Revision

August 13, 2024: At the client's request, all non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

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: Kelly Stenstrom

Title: Technical Director/Representative Date: 08/13/24

ORGANICS

SEMIVOLATILES

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2433960
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2433960-01
Client ID: PC-25
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/14/24 15:05
Date Received: 06/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 06/29/24 12:26
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	5.97	0.956	1
Perfluoropentanoic Acid (PFPeA)	1.02	J	ng/l	2.99	0.799	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.49	0.500	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.97	1.56	1
Perfluorohexanoic Acid (PFHxA)	0.926	J	ng/l	1.49	0.440	1
Perfluoropentanesulfonic Acid (PFPeS)	0.358	J	ng/l	1.49	0.261	1
Perfluoroheptanoic Acid (PFHpA)	0.620	J	ng/l	1.49	0.299	1
Perfluorohexanesulfonic Acid (PFHxS)	3.69		ng/l	1.49	0.358	1
Perfluorooctanoic Acid (PFOA)	1.08	J	ng/l	1.49	0.650	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.97	2.02	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.49	0.403	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.49	0.470	1
Perfluorooctanesulfonic Acid (PFOS)	7.63		ng/l	1.49	0.679	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.49	0.605	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.97	2.32	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.49	0.463	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.49	0.814	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.49	0.650	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.49	0.343	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.49	0.403	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.49	0.806	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.49	0.687	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.49	0.560	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.49	0.396	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.97	0.836	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.97	0.941	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.49	0.567	1

Project Name: BARNSTABLE **Lab Number:** L2433960

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433960-01 Date Collected: 06/14/24 15:05

Client ID: PC-25 Date Received: 06/17/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.97	1.23	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.97	1.23	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.49	0.650	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.49	0.687	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.9	3.51	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.9	1.83	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.99	0.426	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.99	0.396	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.99	0.328	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.99	1.76	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.46	2.46	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.3	8.74	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.3	5.89	1

Project Name: BARNSTABLE **Lab Number:** L2433960

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2433960-01 Date Collected: 06/14/24 15:05

Client ID: PC-25 Date Received: 06/17/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	94		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	91		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	95		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	155		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	89		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	92		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	89		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	90		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	98		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	95		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	104		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	84		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	109		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	107		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	92		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	93		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	103		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	80		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	66		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	86		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	76		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	74		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	85		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	88		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433960
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/29/24 08:10
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01 Batch: WG1940880-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.40	1.02
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.20	0.856
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.60	0.536
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.40	1.67
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.60	0.472
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.60	0.280
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.60	0.320
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.60	0.384
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.60	0.696
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.40	2.16
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.60	0.432
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.60	0.504
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.60	0.728
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.648
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.40	2.49
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.496
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.872
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.696
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.368
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.432
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.864
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.736
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.600
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.424
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.40	0.896
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.40	1.01
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.608

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433960
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/29/24 08:10
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01 Batch: WG1940880-1					
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.40	1.32
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.40	1.32
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.696
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.736
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.76
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.456
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.424
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.352
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	1.89
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.00	2.64
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.0	9.36
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.0	6.31

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433960
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 06/29/24 08:10
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 06/28/24 15:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01 Batch: WG1940880-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	66		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	70		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	66		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	74		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	61		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	63		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	62		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	62		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	61		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	64		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	60		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	57		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	58		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	55		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	57		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	53		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	56		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	52		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	38		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	65		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	32		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	29		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	51		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	49		10-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433960

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG1940880-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	109		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	111		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	112		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	115		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	108		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	121		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	111		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	108		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	110		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	119		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	115		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	100		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	122		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	94		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	120		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	106		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	106		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	112		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	106		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	107		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	121		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	106		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433960

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG1940880-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	100		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	112		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	105		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	116		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	84		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	120		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	103		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	102		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	108		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	120		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	122		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	115		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	97		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	110		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	120		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	102		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	96		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	77		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433960

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG1940880-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	88				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	97				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	91				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	100				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	89				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	89				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	87				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	87				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	87				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	83				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	89				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	84				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	75				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	82				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	79				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	79				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	77				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	62				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	91				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	52				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	51				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	75				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	70				10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433960
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG1940880-3								
Perfluorobutanoic Acid (PFBA)	84		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	85		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	83		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	82		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	90		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	92		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	86		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	84		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	79		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	89		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	87		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	77		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	85		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	86		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	87		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	87		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	88		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	89		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	82		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	81		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	90		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	89		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433960

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG1940880-3								
Perfluorotridecanoic Acid (PFTrDA)	84		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	89		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	84		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	91		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	62		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	91		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	80		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	98		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	87		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	96		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	97		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	90		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	78		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	87		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	98		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	85		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	80		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	68		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2433960

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG1940880-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	86				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	94				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	88				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	97				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	84				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	80				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	84				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	83				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	84				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	77				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	79				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	81				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	72				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	81				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	82				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	71				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	72				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	56				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	88				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	54				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	58				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	75				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	73				10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433960
Report Date: 08/13/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2433960-01A	Plastic 500ml unpreserved	A	NA		4.5	Y	Absent		A2-1633-DRAFT(28)
L2433960-01B	Plastic 500ml unpreserved	A	NA		4.5	Y	Absent		A2-1633-DRAFT(28)
L2433960-01C	Plastic 500ml unpreserved	A	NA		4.5	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2433960
Report Date: 08/13/24

PFAS PARAMETER SUMMARY

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

Project Name: BARNSTABLE
Project Number: 01.0177641.00

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Report Date: 08/13/24

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:	BARNSTABLE	**Lab Number:**	L2433960
Project Number:	01.0177641.00	**Report Date:**	08/13/24

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

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

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

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

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

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

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

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

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2433960
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2433960
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

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

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

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration 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:	BARNSTABLE	**Lab Number:**	L2433960
Project Number:	01.0177641.00	**Report Date:**	08/13/24

REFERENCES

144 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. Draft EPA Method 1633, EPA Document 821-D-22-001, June 2022.

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

Mansfield Facility
SM 2540D: TSS.
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.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

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

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, 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: 6/17/24

ALPHA Job #: L2433960

8 Walkup Drive
Westborn, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: GZA GeoEnvironmental

Address: 249 Vanderbilt ave.
Norwood, MA 02062

Phone: 781-589-3866

Email: Jennifer.Mckechnie@gza.com
Rowan.Thompson@gza.com
Flora.Su@gza.com

Additional Project Information:

Project Information

Project Name: Barnstable

Project Location: 155 S. Flint rock Rd

Project #: 01.0177641.00

Project Manager: Jenn McKechnie

ALPHA Quote #: 27478

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)

Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods

☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)

☒ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)

☐ Yes ☒ No NPDES RGP

☐ Other State /Fed Program _____ Criteria _____

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	ANALYSIS: PFAS: EPA 1633	SAMPLE INFO	TOTAL # BOTTLES
33960.01	PC-25	6/14/24	1505	GW	NCL	X		3

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO: *Filtration* ☐ Field ☐ Lab to do; *Preservation* ☐ Lab to do

Sample Comments

Container Type	P
Preservative	A

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Nicholas Loden	06/15/24 10:45	Flora Su	06/15/24 10:45
Flora Su	06/15/24 11:02	[signature]	6/17/24 1000
[signature]	6/17/24 1600	[signature]	6/17/24 1600
[signature]	6/17/24 1930	B. Mendoza	6/17/24 1530

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

[signature] 6/17/24 20:30

B. Mendoza 6/17/24 2030

ANALYTICAL REPORT

Lab Number:	L2435122
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Jennifer McKechnie
Phone:	(781) 278-3864
Project Name:	BARNSTABLE
Project Number:	01.0177641.00
Report Date:	08/13/24

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0825), DoD (L2474), FL (E87814), IL (200081), IN (C-MA-04), KY (KY98046), LA (85084), ME (MA00030), MD (350), MI (9110), MN (025-999-495), NJ (MA015), NY (11627), NC (685), OR (MA-0262), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #525-23-107-88708A1), USFWS (Permit #A24920).

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

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435122
Report Date: 08/13/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2435122-01	TW 86-5	WATER	155 S. FLINT ROCK RD	06/20/24 08:50	06/21/24
L2435122-02	TW6-08	WATER	155 S. FLINT ROCK RD	06/20/24 10:20	06/21/24
L2435122-03	MW-M3-89	WATER	155 S. FLINT ROCK RD	06/20/24 08:58	06/21/24
L2435122-04	MW-M2-89	WATER	155 S. FLINT ROCK RD	06/20/24 10:15	06/21/24
L2435122-05	M9-90	WATER	155 S. FLINT ROCK RD	06/20/24 11:32	06/21/24
L2435122-06	M4-89	WATER	155 S. FLINT ROCK RD	06/20/24 11:00	06/21/24
L2435122-07	FRP-SW-062024	WATER	155 S. FLINT ROCK RD	06/20/24 13:40	06/21/24
L2435122-08	MDP-SW-062024	WATER	155 S. FLINT ROCK RD	06/20/24 13:35	06/21/24
L2435122-09	UGP-SW-062024	WATER	155 S. FLINT ROCK RD	06/20/24 13:15	06/21/24
L2435122-10	LIP-SW-062024	WATER	155 S. FLINT ROCK RD	06/20/24 12:55	06/21/24
L2435122-11	EQUIPMENT BLANK_WLMETER	WATER	155 S. FLINT ROCK RD	06/20/24 14:15	06/21/24
L2435122-12	EQUIPMENT BLANK_PERISTATIC	WATER	155 S. FLINT ROCK RD	06/20/24 14:00	06/21/24
L2435122-13	EQUIPMENT BLANK_SUBMERSIBLE	WATER	155 S. FLINT ROCK RD	06/20/24 14:20	06/21/24

Project Name:	BARNSTABLE	**Lab Number:**	L2435122
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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:	BARNSTABLE	**Lab Number:**	L2435122
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Case Narrative (continued)

Report Revision

August 13, 2024: At the client's request, all non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Perfluorinated Alkyl Acids by 1633

L2435122-09: The sample has elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix.

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: Kelly Stenstrom

Title: Technical Director/Representative Date: 08/13/24

ORGANICS

SEMIVOLATILES

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435122
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-01
Client ID: TW 86-5
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/20/24 08:50
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/03/24 21:09
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.91	J	ng/l	6.22	0.995	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.11	0.831	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.55	0.521	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.22	1.62	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.55	0.458	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.55	0.272	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.55	0.311	1
Perfluorohexanesulfonic Acid (PFHxS)	0.552	J	ng/l	1.55	0.373	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.55	0.676	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	2.29	J	ng/l	6.22	2.10	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.55	0.420	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.55	0.490	1
Perfluorooctanesulfonic Acid (PFOS)	0.987	JF	ng/l	1.55	0.707	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.55	0.629	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.22	2.42	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.55	0.482	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.55	0.847	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.55	0.676	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.55	0.357	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.55	0.420	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.55	0.839	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.55	0.715	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.55	0.583	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.55	0.412	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.22	0.870	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.22	0.979	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.55	0.590	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-01 Date Collected: 06/20/24 08:50

Client ID: TW 86-5 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.22	1.28	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.22	1.28	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.55	0.676	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.55	0.715	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.5	3.65	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.5	1.90	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.11	0.443	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.11	0.412	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.11	0.342	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.11	1.83	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.77	2.56	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	38.8	9.09	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	38.8	6.13	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-01 Date Collected: 06/20/24 08:50

Client ID: TW 86-5 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	63		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	65		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	63		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	80		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	62		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	66		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	61		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	62		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	65		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	62		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	63		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	54		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	53		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	50		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	51		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	60		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	57		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	55		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	44		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	64		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	46		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	51		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	59		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	58		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435122
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-02
Client ID: TW6-08
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/20/24 10:20
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/03/24 21:22
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	18.2		ng/l	6.04	0.967	1
Perfluoropentanoic Acid (PFPeA)	4.47		ng/l	3.02	0.808	1
Perfluorobutanesulfonic Acid (PFBS)	0.770	J	ng/l	1.51	0.506	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.04	1.58	1
Perfluorohexanoic Acid (PFHxA)	7.46		ng/l	1.51	0.446	1
Perfluoropentanesulfonic Acid (PFPeS)	0.446	J	ng/l	1.51	0.264	1
Perfluoroheptanoic Acid (PFHpA)	2.24		ng/l	1.51	0.302	1
Perfluorohexanesulfonic Acid (PFHxS)	2.85		ng/l	1.51	0.362	1
Perfluorooctanoic Acid (PFOA)	6.88		ng/l	1.51	0.657	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	4.86	J	ng/l	6.04	2.04	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.51	0.408	1
Perfluorononanoic Acid (PFNA)	1.76		ng/l	1.51	0.476	1
Perfluorooctanesulfonic Acid (PFOS)	19.8		ng/l	1.51	0.687	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.51	0.612	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.04	2.35	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.51	0.468	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.51	0.823	1
Perfluoroundecanoic Acid (PFUnA)	0.952	J	ng/l	1.51	0.657	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.51	0.347	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.51	0.408	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.51	0.816	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.51	0.695	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.51	0.566	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.51	0.400	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.04	0.846	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.04	0.952	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.51	0.574	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-02 Date Collected: 06/20/24 10:20

Client ID: TW6-08 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.04	1.25	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.04	1.25	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.51	0.657	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.51	0.695	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.1	3.55	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.1	1.85	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.02	0.430	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.02	0.400	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.02	0.332	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.02	1.78	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.55	2.49	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.8	8.84	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.8	5.96	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-02 Date Collected: 06/20/24 10:20

Client ID: TW6-08 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	80		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	80		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	78		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	153		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	81		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	86		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	78		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	77		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	121		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	77		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	81		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	70		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	115		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	81		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	88		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	74		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	131		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	73		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	75		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	75		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	47		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	46		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	70		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	87		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435122
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-03
Client ID: MW-M3-89
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/20/24 08:58
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/03/24 21:34
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	6.43		ng/l	6.36	1.02	1
Perfluoropentanoic Acid (PFPeA)	2.22	J	ng/l	3.18	0.850	1
Perfluorobutanesulfonic Acid (PFBS)	34.2		ng/l	1.59	0.532	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.36	1.66	1
Perfluorohexanoic Acid (PFHxA)	1.70		ng/l	1.59	0.469	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.59	0.278	1
Perfluoroheptanoic Acid (PFHpA)	0.970	J	ng/l	1.59	0.318	1
Perfluorohexanesulfonic Acid (PFHxS)	3.73		ng/l	1.59	0.381	1
Perfluorooctanoic Acid (PFOA)	2.29		ng/l	1.59	0.691	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.36	2.14	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.59	0.429	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.59	0.501	1
Perfluorooctanesulfonic Acid (PFOS)	2.43		ng/l	1.59	0.723	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.59	0.644	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.36	2.47	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.59	0.493	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.59	0.866	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.59	0.691	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.59	0.366	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.59	0.429	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.59	0.858	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.59	0.731	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.59	0.596	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.59	0.421	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.36	0.890	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.36	1.00	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.59	0.604	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-03 Date Collected: 06/20/24 08:58

Client ID: MW-M3-89 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.36	1.31	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.36	1.31	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.59	0.691	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.59	0.731	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.9	3.74	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.9	1.95	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.18	0.453	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.18	0.421	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.18	0.350	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.18	1.88	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.95	2.62	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	39.7	9.30	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	39.7	6.27	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-03 Date Collected: 06/20/24 08:58

Client ID: MW-M3-89 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	83		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	85		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	84		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	114		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	83		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	84		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	79		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	81		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	92		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	79		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	76		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	64		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	85		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	71		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	65		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	74		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	70		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	65		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	57		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	82		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	58		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	58		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	71		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	74		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435122
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-04
Client ID: MW-M2-89
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/20/24 10:15
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/03/24 21:47
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.81	J	ng/l	5.74	0.918	1
Perfluoropentanoic Acid (PFPeA)	0.925	J	ng/l	2.87	0.767	1
Perfluorobutanesulfonic Acid (PFBS)	13.2		ng/l	1.43	0.480	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.74	1.50	1
Perfluorohexanoic Acid (PFHxA)	0.767	J	ng/l	1.43	0.423	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.43	0.251	1
Perfluoroheptanoic Acid (PFHpA)	0.473	J	ng/l	1.43	0.287	1
Perfluorohexanesulfonic Acid (PFHxS)	0.545	J	ng/l	1.43	0.344	1
Perfluorooctanoic Acid (PFOA)	0.975	J	ng/l	1.43	0.624	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.74	1.94	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.43	0.387	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.43	0.452	1
Perfluorooctanesulfonic Acid (PFOS)	1.69	F	ng/l	1.43	0.652	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.43	0.581	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.74	2.23	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.43	0.444	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.43	0.782	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.43	0.624	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.43	0.330	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.43	0.387	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.43	0.774	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.43	0.660	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.43	0.538	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.43	0.380	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.74	0.803	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.74	0.903	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.43	0.545	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-04 Date Collected: 06/20/24 10:15

Client ID: MW-M2-89 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.74	1.18	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.74	1.18	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.43	0.624	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.43	0.660	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.3	3.37	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.3	1.76	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.87	0.409	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.87	0.380	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.87	0.315	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.87	1.69	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.17	2.37	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	35.8	8.39	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	35.8	5.66	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-04 Date Collected: 06/20/24 10:15

Client ID: MW-M2-89 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	86		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	86		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	88		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	110		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	86		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	88		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	82		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	81		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	91		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	80		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	82		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	68		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	77		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	58		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	71		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	76		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	66		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	64		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	56		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	85		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	63		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	64		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	73		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	69		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435122
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-05
Client ID: M9-90
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/20/24 11:32
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/03/24 22:00
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.01	J	ng/l	5.91	0.945	1
Perfluoropentanoic Acid (PFPeA)	2.47	J	ng/l	2.95	0.790	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.48	0.495	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.91	1.54	1
Perfluorohexanoic Acid (PFHxA)	2.10		ng/l	1.48	0.436	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.48	0.258	1
Perfluoroheptanoic Acid (PFHpA)	1.34	J	ng/l	1.48	0.295	1
Perfluorohexanesulfonic Acid (PFHxS)	1.64		ng/l	1.48	0.354	1
Perfluorooctanoic Acid (PFOA)	2.26		ng/l	1.48	0.642	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.91	1.99	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.48	0.399	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.48	0.465	1
Perfluorooctanesulfonic Acid (PFOS)	3.94		ng/l	1.48	0.672	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.48	0.598	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.91	2.30	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.48	0.458	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.48	0.805	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.48	0.642	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.48	0.340	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.48	0.399	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.48	0.798	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.48	0.680	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.48	0.554	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.48	0.391	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.91	0.827	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.91	0.931	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.48	0.561	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-05 Date Collected: 06/20/24 11:32

Client ID: M9-90 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.91	1.22	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.91	1.22	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.48	0.642	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.48	0.680	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.8	3.47	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.8	1.81	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.95	0.421	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.95	0.391	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.95	0.325	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.95	1.74	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.38	2.44	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.9	8.64	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.9	5.83	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-05 Date Collected: 06/20/24 11:32

Client ID: M9-90 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	80		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	80		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	82		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	95		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	77		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	80		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	77		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	76		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	84		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	76		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	73		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	71		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	70		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	64		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	64		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	77		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	69		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	66		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	53		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	79		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	58		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	61		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	70		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	67		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435122
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-06
Client ID: M4-89
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/20/24 11:00
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/03/24 23:08
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.88	J	ng/l	6.58	1.05	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.29	0.880	1
Perfluorobutanesulfonic Acid (PFBS)	2.17		ng/l	1.64	0.551	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.58	1.72	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.64	0.485	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.64	0.288	1
Perfluoroheptanoic Acid (PFHpA)	0.337	J	ng/l	1.64	0.329	1
Perfluorohexanesulfonic Acid (PFHxS)	0.674	J	ng/l	1.64	0.395	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.64	0.715	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.58	2.22	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.64	0.444	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.64	0.518	1
Perfluorooctanesulfonic Acid (PFOS)	2.10		ng/l	1.64	0.748	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.64	0.666	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.58	2.56	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.64	0.510	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.64	0.896	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.64	0.715	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.64	0.378	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.64	0.444	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.64	0.888	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.64	0.756	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.64	0.617	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.64	0.436	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.58	0.921	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.58	1.04	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.64	0.625	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-06 Date Collected: 06/20/24 11:00

Client ID: M4-89 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.58	1.36	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.58	1.36	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.64	0.715	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.64	0.756	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.4	3.86	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.4	2.01	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.29	0.469	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.29	0.436	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.29	0.362	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.29	1.94	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.22	2.71	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	41.1	9.62	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	41.1	6.49	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-06 Date Collected: 06/20/24 11:00

Client ID: M4-89 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	83		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	84		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	79		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	106		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	80		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	85		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	79		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	76		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	90		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	78		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	77		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	72		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	85		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	67		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	70		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	84		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	71		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	70		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	60		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	80		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	54		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	56		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	74		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	73		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435122
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-07
Client ID: FRP-SW-062024
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/20/24 13:40
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/03/24 23:21
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	18.6		ng/l	6.19	0.991	1
Perfluoropentanoic Acid (PFPeA)	36.6		ng/l	3.10	0.828	1
Perfluorobutanesulfonic Acid (PFBS)	2.14		ng/l	1.55	0.519	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.19	1.62	1
Perfluorohexanoic Acid (PFHxA)	34.8		ng/l	1.55	0.457	1
Perfluoropentanesulfonic Acid (PFPeS)	4.53		ng/l	1.55	0.271	1
Perfluoroheptanoic Acid (PFHpA)	39.7		ng/l	1.55	0.310	1
Perfluorohexanesulfonic Acid (PFHxS)	46.7		ng/l	1.55	0.372	1
Perfluorooctanoic Acid (PFOA)	33.5		ng/l	1.55	0.674	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	2.24	J	ng/l	6.19	2.09	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.61		ng/l	1.55	0.418	1
Perfluorononanoic Acid (PFNA)	31.7		ng/l	1.55	0.488	1
Perfluorooctanesulfonic Acid (PFOS)	138		ng/l	1.55	0.705	1
Perfluorodecanoic Acid (PFDA)	8.35		ng/l	1.55	0.627	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.19	2.41	1
Perfluorononanesulfonic Acid (PFNS)	0.511	J	ng/l	1.55	0.480	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.55	0.844	1
Perfluoroundecanoic Acid (PFUnA)	32.8		ng/l	1.55	0.674	1
Perfluorodecanesulfonic Acid (PFDS)	0.805	J	ng/l	1.55	0.356	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.55	0.418	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.55	0.836	1
Perfluorododecanoic Acid (PFDoA)	2.68		ng/l	1.55	0.712	1
Perfluorotridecanoic Acid (PFTrDA)	2.79		ng/l	1.55	0.581	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.55	0.410	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.19	0.867	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.19	0.976	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.55	0.588	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-07 Date Collected: 06/20/24 13:40

Client ID: FRP-SW-062024 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.19	1.28	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.19	1.28	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.55	0.674	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.55	0.712	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.5	3.64	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.5	1.90	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.10	0.441	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.10	0.410	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.10	0.341	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.10	1.83	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.74	2.56	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	38.7	9.06	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	38.7	6.11	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-07 Date Collected: 06/20/24 13:40

Client ID: FRP-SW-062024 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	65		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	61		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	66		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	121		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	65		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	70		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	66		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	65		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	92		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	70		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	68		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	60		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	79		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	60		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	63		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	68		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	64		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	63		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	45		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	64		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	58		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	56		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	61		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	60		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435122
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-08
Client ID: MDP-SW-062024
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/20/24 13:35
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/03/24 23:34
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.16	J	ng/l	5.96	0.953	1
Perfluoropentanoic Acid (PFPeA)	3.16		ng/l	2.98	0.797	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.49	0.499	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.96	1.56	1
Perfluorohexanoic Acid (PFHxA)	2.27		ng/l	1.49	0.439	1
Perfluoropentanesulfonic Acid (PFPeS)	0.610	J	ng/l	1.49	0.261	1
Perfluoroheptanoic Acid (PFHpA)	2.14		ng/l	1.49	0.298	1
Perfluorohexanesulfonic Acid (PFHxS)	6.60		ng/l	1.49	0.357	1
Perfluorooctanoic Acid (PFOA)	1.64		ng/l	1.49	0.648	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.96	2.01	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.49	0.402	1
Perfluorononanoic Acid (PFNA)	1.68		ng/l	1.49	0.469	1
Perfluorooctanesulfonic Acid (PFOS)	9.73		ng/l	1.49	0.678	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.49	0.603	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.96	2.32	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.49	0.462	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.49	0.812	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.49	0.648	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.49	0.342	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.49	0.402	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.49	0.804	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.49	0.685	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.49	0.558	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.49	0.395	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.96	0.834	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.96	0.938	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.49	0.566	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-08 Date Collected: 06/20/24 13:35

Client ID: MDP-SW-062024 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.96	1.23	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.96	1.23	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.49	0.648	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.49	0.685	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.9	3.50	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.9	1.82	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.98	0.424	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.98	0.395	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.98	0.328	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.98	1.76	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.45	2.46	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.2	8.71	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.2	5.87	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-08 Date Collected: 06/20/24 13:35

Client ID: MDP-SW-062024 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	78		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	75		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	80		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	157		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	78		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	82		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	78		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	75		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	104		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	80		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	75		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	73		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	99		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	74		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	73		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	82		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	75		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	71		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	46		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	76		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	64		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	63		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	76		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	72		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435122
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-09
Client ID: UGP-SW-062024
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/20/24 13:15
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/03/24 23:46
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	6.96	J	ng/l	32.0	5.12	1
Perfluoropentanoic Acid (PFPeA)	4.68	J	ng/l	16.0	4.28	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	8.00	2.68	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	32.0	8.36	1
Perfluorohexanoic Acid (PFHxA)	3.32	J	ng/l	8.00	2.36	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	8.00	1.40	1
Perfluoroheptanoic Acid (PFHpA)	1.76	J	ng/l	8.00	1.60	1
Perfluorohexanesulfonic Acid (PFHxS)	5.00	J	ng/l	8.00	1.92	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	8.00	3.48	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	32.0	10.8	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	8.00	2.16	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	8.00	2.52	1
Perfluorooctanesulfonic Acid (PFOS)	17.0		ng/l	8.00	3.64	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	8.00	3.24	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	32.0	12.4	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	8.00	2.48	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	8.00	4.36	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	8.00	3.48	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	8.00	1.84	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	8.00	2.16	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	8.00	4.32	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	8.00	3.68	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	8.00	3.00	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	8.00	2.12	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	32.0	4.48	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	32.0	5.04	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	8.00	3.04	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-09 Date Collected: 06/20/24 13:15

Client ID: UGP-SW-062024 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	32.0	6.60	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	32.0	6.60	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	8.00	3.48	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	8.00	3.68	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	80.0	18.8	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	80.0	9.80	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	16.0	2.28	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	16.0	2.12	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	16.0	1.76	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	16.0	9.44	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	40.0	13.2	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	200	46.8	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	200	31.6	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-09 Date Collected: 06/20/24 13:15

Client ID: UGP-SW-062024 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	81		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	86		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	83		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	139		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	84		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	88		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	79		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	78		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	97		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	76		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	80		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	76		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	92		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	77		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	74		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	78		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	76		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	72		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	50		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	82		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	61		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	61		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	70		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	68		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435122
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-10
Client ID: LIP-SW-062024
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/20/24 12:55
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/03/24 23:59
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.06	J	ng/l	6.10	0.976	1
Perfluoropentanoic Acid (PFPeA)	1.34	J	ng/l	3.05	0.816	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.52	0.511	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.10	1.59	1
Perfluorohexanoic Acid (PFHxA)	0.892	J	ng/l	1.52	0.450	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.52	0.267	1
Perfluoroheptanoic Acid (PFHpA)	0.770	J	ng/l	1.52	0.305	1
Perfluorohexanesulfonic Acid (PFHxS)	1.67		ng/l	1.52	0.366	1
Perfluorooctanoic Acid (PFOA)	1.01	J	ng/l	1.52	0.663	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.10	2.06	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.52	0.412	1
Perfluorononanoic Acid (PFNA)	0.541	J	ng/l	1.52	0.480	1
Perfluorooctanesulfonic Acid (PFOS)	5.60		ng/l	1.52	0.694	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.52	0.618	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.10	2.37	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.52	0.473	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.52	0.831	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.52	0.663	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.52	0.351	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.52	0.412	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.52	0.824	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.52	0.702	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.52	0.572	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.52	0.404	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.10	0.854	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.10	0.961	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.52	0.580	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-10 Date Collected: 06/20/24 12:55

Client ID: LIP-SW-062024 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.10	1.26	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.10	1.26	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.52	0.663	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.52	0.702	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.2	3.58	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.2	1.87	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.05	0.435	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.05	0.404	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.05	0.336	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.05	1.80	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.63	2.52	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	38.1	8.92	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	38.1	6.02	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-10 Date Collected: 06/20/24 12:55

Client ID: LIP-SW-062024 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	75		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	68		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	74		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	141		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	79		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	83		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	72		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	73		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	109		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	71		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	70		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	63		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	90		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	71		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	66		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	67		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	73		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	64		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	37		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	75		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	53		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	52		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	70		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	62		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435122
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-11
Client ID: EQUIPMENT BLANK_WLMETER
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/20/24 14:15
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/04/24 00:12
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	5.94	0.951	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.97	0.795	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.48	0.498	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.94	1.55	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.48	0.438	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.48	0.260	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.48	0.297	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.48	0.356	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.48	0.646	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.94	2.00	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.48	0.401	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.48	0.468	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.48	0.676	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.48	0.602	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.94	2.31	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.48	0.460	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.48	0.810	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.48	0.646	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.48	0.342	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.48	0.401	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.48	0.802	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.48	0.683	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.48	0.557	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.48	0.394	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.94	0.832	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.94	0.936	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.48	0.564	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-11 Date Collected: 06/20/24 14:15

Client ID: EQUIPMENT BLANK_WLMETER Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.94	1.22	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.94	1.22	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.48	0.646	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.48	0.683	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.8	3.49	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.8	1.82	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.97	0.423	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.97	0.394	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.97	0.327	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.97	1.75	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.43	2.45	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.1	8.69	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.1	5.86	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-11 Date Collected: 06/20/24 14:15

Client ID: EQUIPMENT BLANK_WLMETER Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	75		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	79		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	73		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	87		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	72		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	72		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	71		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	74		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	79		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	77		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	81		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	70		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	73		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	80		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	73		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	83		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	89		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	73		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	58		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	72		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	57		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	61		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	80		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	82		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435122
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-12
Client ID: EQUIPMENT BLANK_PERISTATIC
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/20/24 14:00
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/04/24 00:25
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.09	J	ng/l	6.22	0.995	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.11	0.832	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.56	0.521	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.22	1.62	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.56	0.459	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.56	0.272	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.56	0.311	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.56	0.373	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.56	0.676	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.22	2.10	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.56	0.420	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.56	0.490	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.56	0.708	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.56	0.630	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.22	2.42	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.56	0.482	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.56	0.847	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.56	0.676	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.56	0.358	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.56	0.420	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.56	0.840	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.56	0.715	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.56	0.583	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.56	0.412	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.22	0.871	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.22	0.980	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.56	0.591	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-12 Date Collected: 06/20/24 14:00

Client ID: EQUIPMENT BLANK_PERISTATIC Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.22	1.28	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.22	1.28	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.56	0.676	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.56	0.715	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.6	3.65	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.6	1.90	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.11	0.443	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.11	0.412	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.11	0.342	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.11	1.83	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.78	2.56	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	38.9	9.10	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	38.9	6.13	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-12 Date Collected: 06/20/24 14:00

Client ID: EQUIPMENT BLANK_PERISTATIC Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	89		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	96		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	95		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	98		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	90		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	91		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	91		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	92		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	95		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	86		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	92		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	80		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	81		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	86		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	83		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	93		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	89		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	82		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	67		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	90		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	61		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	68		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	91		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	88		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435122
Report Date: 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-13
Client ID: EQUIPMENT BLANK_SUBMERSIBLE
Sample Location: 155 S. FLINT ROCK RD

Date Collected: 06/20/24 14:20
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/04/24 00:37
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.24	J	ng/l	6.15	0.983	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.07	0.822	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.54	0.515	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.15	1.60	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.54	0.453	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.54	0.269	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.54	0.307	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.54	0.369	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.54	0.668	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.15	2.07	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.54	0.415	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.54	0.484	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.54	0.699	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.54	0.622	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.15	2.39	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.54	0.476	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.54	0.837	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.54	0.668	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.54	0.353	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.54	0.415	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.54	0.830	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.54	0.707	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.54	0.576	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.54	0.407	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.15	0.860	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.15	0.968	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.54	0.584	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-13 Date Collected: 06/20/24 14:20

Client ID: EQUIPMENT BLANK_SUBMERSIBLE Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.15	1.27	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.15	1.27	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.54	0.668	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.54	0.707	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.4	3.61	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.4	1.88	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.07	0.438	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.07	0.407	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.07	0.338	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.07	1.81	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.68	2.54	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	38.4	8.99	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	38.4	6.06	1

Project Name: BARNSTABLE **Lab Number:** L2435122

Project Number: 01.0177641.00 **Report Date:** 08/13/24

SAMPLE RESULTS

Lab ID: L2435122-13 Date Collected: 06/20/24 14:20

Client ID: EQUIPMENT BLANK_SUBMERSIBLE Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK RD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	87		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	92		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	84		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	88		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	82		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	85		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	80		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	85		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	88		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	86		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	84		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	80		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	80		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	70		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	83		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	80		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	72		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	77		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	59		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	85		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	57		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	59		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	72		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	72		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435122
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 07/03/24 19:01
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-13 Batch: WG1942667-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.40	1.02
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.20	0.856
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.60	0.536
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.40	1.67
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.60	0.472
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.60	0.280
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.60	0.320
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.60	0.384
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.60	0.696
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.40	2.16
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.60	0.432
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.60	0.504
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.60	0.728
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.648
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.40	2.49
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.496
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.872
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.696
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.368
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.432
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.864
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.736
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.600
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.424
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.40	0.896
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.40	1.01
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.608

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435122
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 07/03/24 19:01
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-13 Batch: WG1942667-1					
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.40	1.32
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.40	1.32
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.696
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.736
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.76
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.456
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.424
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.352
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	1.89
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.00	2.64
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.0	9.36
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.0	6.31

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435122
Report Date: 08/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 07/03/24 19:01
Analyst: SL

Extraction Method: EPA 1633
Extraction Date: 07/03/24 06:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-13 Batch: WG1942667-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	88		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	95		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	93		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	93		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	89		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	88		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	84		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	85		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	94		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	92		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	92		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	85		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	75		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	83		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	84		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	88		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	86		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	82		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	74		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	84		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	58		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	58		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	79		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	81		10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435122
Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-13 Batch: WG1942667-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	108		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	103		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	110		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	98		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	107		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	111		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	102		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	102		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	102		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	110		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	92		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	98		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	101		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	100		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	109		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	94		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	117		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	102		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	91		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	98		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	86		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	102		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435122
Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-13 Batch: WG1942667-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	104		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	103		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	99		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	108		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	67		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	110		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	94		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	98		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	84		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	105		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	107		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	103		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	90		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	105		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	106		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	102		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	86		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	64		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2435122

Report Date: 08/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-13 Batch: WG1942667-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	75				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	85				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	73				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	80				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	75				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	75				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	70				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	71				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	74				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	71				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	76				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	75				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	69				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	63				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	74				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	72				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	67				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	67				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	58				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	75				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	48				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	48				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	67				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	66				10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435122
Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-13 Batch: WG1942667-3								
Perfluorobutanoic Acid (PFBA)	93		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	92		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	92		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	91		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	101		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	100		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	89		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	90		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	86		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	97		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	90		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	82		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	85		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	90		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	97		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	90		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	95		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	92		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	86		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	90		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	86		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	92		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2435122

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-13 Batch: WG1942667-3								
Perfluorotridecanoic Acid (PFTrDA)	92		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	93		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	92		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	102		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	64		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	104		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	94		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	102		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	90		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	106		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	101		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	98		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	82		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	106		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	95		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	90		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	95		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	78		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2435122

Report Date: 08/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-13 Batch: WG1942667-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	97				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	105				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	95				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	100				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	90				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	100				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	94				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	96				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	100				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	90				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	103				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	85				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	86				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	85				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	83				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	96				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	90				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	84				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	68				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	93				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	63				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	67				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	84				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	85				10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435122
Report Date: 08/13/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent
D	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2435122-01A	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2435122-01B	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2435122-01C	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2435122-02A	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2435122-02B	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2435122-02C	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2435122-03A	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2435122-03B	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2435122-03C	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2435122-04A	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2435122-04B	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2435122-04C	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2435122-05A	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2435122-05B	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2435122-05C	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2435122-06A	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2435122-06B	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2435122-06C	Plastic 500ml unpreserved	B	NA		5.6	Y	Absent		A2-1633-DRAFT(28)
L2435122-07A	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-07B	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435122
Report Date: 08/13/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2435122-07C	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-08A	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-08B	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-08C	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-09A	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-09B	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-09C	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-10A	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-10B	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-10C	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-11A	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-11B	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-11C	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-12A	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-12B	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-12C	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-13A	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-13B	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)
L2435122-13C	Plastic 500ml unpreserved	C	NA		4.0	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435122
Report Date: 08/13/24

PFAS PARAMETER SUMMARY

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

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435122
Report Date: 08/13/24

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:	BARNSTABLE	**Lab Number:**	L2435122
Project Number:	01.0177641.00	**Report Date:**	08/13/24

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

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

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

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

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

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

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

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

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2435122
Project Number:	01.0177641.00	**Report Date:**	08/13/24

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2435122
Project Number:	01.0177641.00	**Report Date:**	08/13/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

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

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

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

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

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

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	BARNSTABLE	**Lab Number:**	L2435122
Project Number:	01.0177641.00	**Report Date:**	08/13/24

REFERENCES

144 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. Draft EPA Method 1633, EPA Document 821-D-22-001, June 2022.

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

Mansfield Facility
SM 2540D: TSS.
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.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

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

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, 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 2

ALPHA ANALYTICAL

6 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 6/21/24

ALPHA Job #: L2435122

Client Information

Client: GZA GeoEnvironmental Inc.
Address: 249 Vanderbilt Avenue
Norwood, MA 02062
Phone: 781-327-9155
Email: flora.su@gza.com
jennifer.mckechnie@gza.com
rowan.thompson@gza.com

Additional Project Information:

Project Information

Project Name: Barnstable
Project Location: 155 S. Flint Rock Rd
Project #: 01.0177641.00
Project Manager: Jennifer Mckechnie
ALPHA Quote #: 27478

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods
☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☒ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	ANALYSIS: PFAS: EPA 1633	TOTAL # BOTTLES
-01	TW 86-5	06/20/24	0850	GW	KC	X	3
-02	~~TW 30-4~~ TW6-08		1020	GW	KC	X	
-03	MW-M3-89		0858	GW	CS	X	
-04	MW-M2-89		1015	GW	CS	X	
-05	M9-90		1132	GW	CS	X	
-06	M4-89		1100	GW	VER	X	
-07	FRP-SW-062024		1340	SW	VER	X	
-08	MDP-SW-062024		1335	SW	VER	X	
-09	UGP-SW-062024		1315	SW	VER	X	
-10	LIP-SW-062024	06/20/24	1255	SW	VER	X	3
					Container Type	P	
					Preservative	A	

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do
Sample Comments

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H= $Na_2S_2O_3$
I= Ascorbic Acid
J= NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Victoria Rouleau	06/20/24 1700		6/21 10:00
	6/21/24		6/21/24 12:30
	6/21/24 1630		6/21/24 1600
		Alicia Hartlund	6/21/24 16:30

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 6/21/24

ALPHA Job #: L2435122

ALPHA
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: GZA GeoEnvironmental Inc.

Address: 249 Vanderbilt Avenue
Norwood, MA 02062

Phone: 781-327-9155

Email: flora.jy@gza.com
jennifer.mckechnie@gza.com
rowan.thompson@gza.com

Project Information

Project Name: Barnstable

Project Location: 155 S. Flint Rock Rd

Project #: 01.0177641.00

Project Manager: Jennifer McKechnie

ALPHA Quote #: 27478

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)

Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client Info PO #:

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☒ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:

Sample matrix 'DI' indicates PFAS free 'DI' water.
Equipment Blank = 'EB' on sample bottles

ANALYSIS

VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
PFAS: EPA 1633

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	PFAS	Sample Comments	TOTAL # BOTTLES
-11	Equipment Blank_WLMeter	06/20/24	1415	DI	KC	X		3
-12	Equipment Blank_Peristaltic	06/20/24	1400	DI	VER	X		3
-13	Equipment Blank_Submersible	06/20/24	1420	DI	VER	X		3

Container Type	P
Preservative	A

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Victoria Rowland VR	06/20/24 1700		6/21 10:00
	6/21 6:21		6/21/24 1230
	6/21/24 1630		6/21/24 16:30

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L2435150
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Jennifer McKechnie
Phone:	(781) 278-3864
Project Name:	BARNSTABLE
Project Number:	01.0177641.00
Report Date:	08/12/24

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2435150-01	MW-13S	WATER	155 S. FLINT ROCK ROAD	06/19/24 10:43	06/21/24
L2435150-02	TW64-0	WATER	155 S. FLINT ROCK ROAD	06/19/24 13:40	06/21/24
L2435150-03	TW4-08	WATER	155 S. FLINT ROCK ROAD	06/19/24 16:10	06/21/24
L2435150-04	TW5-08	WATER	155 S. FLINT ROCK ROAD	06/19/24 17:35	06/21/24
L2435150-05	VDT-05	WATER	155 S. FLINT ROCK ROAD	06/19/24 12:40	06/21/24
L2435150-06	64-M1	WATER	155 S. FLINT ROCK ROAD	06/19/24 14:00	06/21/24
L2435150-07	TW7-08	WATER	155 S. FLINT ROCK ROAD	06/19/24 15:40	06/21/24
L2435150-08	M5-90	WATER	155 S. FLINT ROCK ROAD	06/19/24 17:00	06/21/24

Project Name:	BARNSTABLE	**Lab Number:**	L2435150
Project Number:	01.0177641.00	**Report Date:**	08/12/24

MADEP MCP Response Action Analytical Report Certification

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

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

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

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

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

Project Name:	BARNSTABLE	**Lab Number:**	L2435150
Project Number:	01.0177641.00	**Report Date:**	08/12/24

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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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: BARNSTABLE **Lab Number:** L2435150
Project Number: 01.0177641.00 **Report Date:** 08/12/24

Case Narrative (continued)

Report Revision

August 12, 2024: All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Report Submission

July 15, 2024: This final report includes the results of all requested analyses.

July 01, 2024: This is a preliminary report.

MCP Related Narratives

Volatile Organics

L2435150-01: Initial calibration utilized a quadratic fit for: styrene

L2435150-01: A copy of the continuing calibration standard is included as an addendum to this report.

In reference to question H:

L2435150-01: Initial Calibration did not meet:

Lowest Calibration Standard Minimum Response Factor: 1,4-dioxane (0.0018), 1,1,2-trichloroethane(0.1989)

Average Response Factor: 1,4-dioxane

VPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

Non-MCP Related Narratives

Perfluorinated Alkyl Acids by 1633

L2435150-01, WG1946422-4, and WG1946422-5: The sample was re-analyzed on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

Project Name:	BARNSTABLE	**Lab Number:**	L2435150
Project Number:	01.0177641.00	**Report Date:**	08/12/24

Case Narrative (continued)

L2435150-01, WG1946422-4 and WG1946422-5: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.
The WG1946422-4/-5 MS/MSD recoveries, performed on L2435150-01, are outside the acceptance criteria for perfluorooctanesulfonic acid (pfos) (221%/0%) and perfluorooctanesulfonamide (fosa) (MSD 0%). The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in the native sample.
The WG1946422-4D/-5D MS/MSD recoveries, performed on L2435150-01, are outside the acceptance criteria for perfluorooctanesulfonic acid (pfos) (0%/444%) and perfluorooctanesulfonamide (fosa) (31%/0%). The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in 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: Kelly O'Neill

Title: Technical Director/Representative Date: 08/12/24

QC OUTLIER SUMMARY REPORT

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab								
1633	MW-13S	L2435150-01	N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	Surrogate	95	11-94	-	- - not applicable - -
1633	MW-13S	L2435150-01	N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	Surrogate	100	11-97	-	- - not applicable - -
1633	Batch QC (L2435150-01)	WG1946422-4	Perfluorooctanesulfonic Acid (PFOS)	MS	221	40-150	01-08	potential high bias
1633	Batch QC (L2435150-01)	WG1946422-4	N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	Surrogate	104	11-97	-	- - not applicable - -
1633	Batch QC (L2435150-01)	WG1946422-4 D	Perfluorooctanesulfonic Acid (PFOS)	MS	0	40-150	01-08	potential low bias
1633	Batch QC (L2435150-01)	WG1946422-4 D	Perfluorooctanesulfonamide (PFOSA)	MS	31	40-150	01-08	potential low bias
1633	Batch QC (L2435150-01)	WG1946422-5	Perfluorooctanesulfonic Acid (PFOS)	MSD	0	40-150	01-08	potential low bias
1633	Batch QC (L2435150-01)	WG1946422-5	Perfluorooctanesulfonamide (PFOSA)	MSD	0	40-150	01-08	potential low bias
1633	Batch QC (L2435150-01)	WG1946422-5	N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	Surrogate	102	11-97	-	- - not applicable - -
1633	Batch QC (L2435150-01)	WG1946422-5 D	Perfluorooctanesulfonic Acid (PFOS)	MSD	444	40-150	01-08	potential high bias
1633	Batch QC (L2435150-01)	WG1946422-5 D	Perfluorooctanesulfonamide (PFOSA)	MSD	0	40-150	01-08	potential low bias

ORGANICS

VOLATILES

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-01 Date Collected: 06/19/24 10:43
Client ID: MW-13S Date Received: 06/21/24
Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 141,8260D
Analytical Date: 06/27/24 07:11
Analyst: MCM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	0.68	1
1,1-Dichloroethane	ND		ug/l	1.0	0.21	1
Chloroform	5.3		ug/l	1.0	0.22	1
Carbon tetrachloride	ND		ug/l	1.0	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	1.0	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14	1
Tetrachloroethene	ND		ug/l	1.0	0.18	1
Chlorobenzene	ND		ug/l	1.0	0.18	1
Trichlorofluoromethane	ND		ug/l	2.0	0.16	1
1,2-Dichloroethane	ND		ug/l	1.0	0.13	1
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16	1
Bromodichloromethane	ND		ug/l	1.0	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14	1
1,1-Dichloropropene	ND		ug/l	2.0	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	1.0	0.20	1
Ethylbenzene	ND		ug/l	1.0	0.17	1
Chloromethane	ND		ug/l	2.0	0.20	1
Bromomethane	ND		ug/l	2.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.0	0.13	1
1,1-Dichloroethene	ND		ug/l	1.0	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16	1

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-01 Date Collected: 06/19/24 10:43

Client ID: MW-13S Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

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

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-01 Date Collected: 06/19/24 10:43

Client ID: MW-13S Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	115		70-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 06/27/24 06:16
Analyst: MCM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01 Batch: WG1940536-5					
Methylene chloride	ND		ug/l	2.0	0.68
1,1-Dichloroethane	ND		ug/l	1.0	0.21
Chloroform	ND		ug/l	1.0	0.22
Carbon tetrachloride	ND		ug/l	1.0	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	1.0	0.15
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14
Tetrachloroethene	ND		ug/l	1.0	0.18
Chlorobenzene	ND		ug/l	1.0	0.18
Trichlorofluoromethane	ND		ug/l	2.0	0.16
1,2-Dichloroethane	ND		ug/l	1.0	0.13
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16
Bromodichloromethane	ND		ug/l	1.0	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14
1,1-Dichloropropene	ND		ug/l	2.0	0.24
Bromoform	ND		ug/l	2.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	1.0	0.20
Ethylbenzene	ND		ug/l	1.0	0.17
Chloromethane	ND		ug/l	2.0	0.20
Bromomethane	ND		ug/l	2.0	0.26
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.0	0.13
1,1-Dichloroethene	ND		ug/l	1.0	0.17
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16
Trichloroethene	ND		ug/l	1.0	0.18

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435150
Report Date: 08/12/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 06/27/24 06:16
Analyst: MCM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01 Batch: WG1940536-5					
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19
Methyl tert butyl ether	ND		ug/l	2.0	0.17
p/m-Xylene	ND		ug/l	2.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16
Dibromomethane	ND		ug/l	2.0	0.36
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18
Styrene	ND		ug/l	1.0	0.36
Dichlorodifluoromethane	ND		ug/l	2.0	0.24
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	2.0	0.30
Methyl ethyl ketone	ND		ug/l	5.0	1.9
Methyl isobutyl ketone	ND		ug/l	5.0	0.42
2-Hexanone	ND		ug/l	5.0	0.52
Bromochloromethane	ND		ug/l	2.0	0.15
Tetrahydrofuran	ND		ug/l	2.0	0.52
2,2-Dichloropropane	ND		ug/l	2.0	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
1,3-Dichloropropane	ND		ug/l	2.0	0.21
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16
Bromobenzene	ND		ug/l	2.0	0.15
n-Butylbenzene	ND		ug/l	2.0	0.19
sec-Butylbenzene	ND		ug/l	2.0	0.18
tert-Butylbenzene	ND		ug/l	2.0	0.20
o-Chlorotoluene	ND		ug/l	2.0	0.22

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435150
Report Date: 08/12/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 06/27/24 06:16
Analyst: MCM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01 Batch: WG1940536-5					
p-Chlorotoluene	ND		ug/l	2.0	0.18
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35
Hexachlorobutadiene	ND		ug/l	0.60	0.22
Isopropylbenzene	ND		ug/l	2.0	0.19
p-Isopropyltoluene	ND		ug/l	2.0	0.19
Naphthalene	ND		ug/l	2.0	0.22
n-Propylbenzene	ND		ug/l	2.0	0.17
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22
1,3,5-Trimethylbenzene	ND		ug/l	2.0	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.0	0.19
Diethyl ether	ND		ug/l	2.0	0.16
Diisopropyl Ether	ND		ug/l	2.0	0.42
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28
1,4-Dioxane	ND		ug/l	250	61.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	113		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1940536-3 WG1940536-4								
Methylene chloride	99		94		70-130	5		20
1,1-Dichloroethane	95		95		70-130	0		20
Chloroform	98		95		70-130	3		20
Carbon tetrachloride	96		100		70-130	4		20
1,2-Dichloropropane	93		92		70-130	1		20
Dibromochloromethane	94		95		70-130	1		20
1,1,2-Trichloroethane	93		93		70-130	0		20
Tetrachloroethene	95		99		70-130	4		20
Chlorobenzene	93		95		70-130	2		20
Trichlorofluoromethane	100		100		70-130	0		20
1,2-Dichloroethane	99		97		70-130	2		20
1,1,1-Trichloroethane	100		110		70-130	10		20
Bromodichloromethane	95		97		70-130	2		20
trans-1,3-Dichloropropene	88		89		70-130	1		20
cis-1,3-Dichloropropene	96		97		70-130	1		20
1,1-Dichloropropene	98		100		70-130	2		20
Bromoform	82		86		70-130	5		20
1,1,2,2-Tetrachloroethane	100		100		70-130	0		20
Benzene	93		95		70-130	2		20
Toluene	90		94		70-130	4		20
Ethylbenzene	92		94		70-130	2		20
Chloromethane	89		87		70-130	2		20
Bromomethane	82		96		70-130	16		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1940536-3 WG1940536-4								
Vinyl chloride	94		94		70-130	0		20
Chloroethane	90		90		70-130	0		20
1,1-Dichloroethene	100		100		70-130	0		20
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	88		87		70-130	1		20
1,2-Dichlorobenzene	92		96		70-130	4		20
1,3-Dichlorobenzene	92		95		70-130	3		20
1,4-Dichlorobenzene	93		97		70-130	4		20
Methyl tert butyl ether	90		89		70-130	1		20
p/m-Xylene	90		90		70-130	0		20
o-Xylene	85		90		70-130	6		20
cis-1,2-Dichloroethene	98		100		70-130	2		20
Dibromomethane	96		95		70-130	1		20
1,2,3-Trichloropropane	96		95		70-130	1		20
Styrene	85		85		70-130	0		20
Dichlorodifluoromethane	81		79		70-130	3		20
Acetone	97		90		70-130	7		20
Carbon disulfide	98		100		70-130	2		20
Methyl ethyl ketone	89		88		70-130	1		20
Methyl isobutyl ketone	82		84		70-130	2		20
2-Hexanone	89		88		70-130	1		20
Bromochloromethane	97		96		70-130	1		20
Tetrahydrofuran	90		78		70-130	14		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2435150

Report Date: 08/12/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1940536-3 WG1940536-4								
2,2-Dichloropropane	110		110		70-130	0		20
1,2-Dibromoethane	94		97		70-130	3		20
1,3-Dichloropropane	95		97		70-130	2		20
1,1,1,2-Tetrachloroethane	88		90		70-130	2		20
Bromobenzene	96		100		70-130	4		20
n-Butylbenzene	99		100		70-130	1		20
sec-Butylbenzene	98		100		70-130	2		20
tert-Butylbenzene	96		99		70-130	3		20
o-Chlorotoluene	98		100		70-130	2		20
p-Chlorotoluene	96		100		70-130	4		20
1,2-Dibromo-3-chloropropane	91		94		70-130	3		20
Hexachlorobutadiene	100		110		70-130	10		20
Isopropylbenzene	97		100		70-130	3		20
p-Isopropyltoluene	95		98		70-130	3		20
Naphthalene	92		97		70-130	5		20
n-Propylbenzene	97		99		70-130	2		20
1,2,3-Trichlorobenzene	98		100		70-130	2		20
1,2,4-Trichlorobenzene	99		100		70-130	1		20
1,3,5-Trimethylbenzene	96		98		70-130	2		20
1,2,4-Trimethylbenzene	95		98		70-130	3		20
Diethyl ether	99		96		70-130	3		20
Diisopropyl Ether	89		89		70-130	0		20
Ethyl-Tert-Butyl-Ether	87		87		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2435150

Report Date: 08/12/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1940536-3 WG1940536-4								
Tertiary-Amyl Methyl Ether	84		84		70-130	0		20
1,4-Dioxane	98		96		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		94		70-130
Toluene-d8	100		103		70-130
4-Bromofluorobenzene	104		104		70-130
Dibromofluoromethane	98		101		70-130

SEMIVOLATILES

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435150
Report Date: 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-01
Client ID: MW-13S
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/19/24 10:43
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/13/24 13:15
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 07/12/24 17:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	12.5		ng/l	6.01	0.961	1
Perfluoropentanoic Acid (PFPeA)	29.9		ng/l	3.00	0.803	1
Perfluorobutanesulfonic Acid (PFBS)	16.7		ng/l	1.50	0.503	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.01	1.57	1
Perfluorohexanoic Acid (PFHxA)	81.4		ng/l	1.50	0.443	1
Perfluoropentanesulfonic Acid (PFPeS)	17.6		ng/l	1.50	0.263	1
Perfluoroheptanoic Acid (PFHpA)	16.9		ng/l	1.50	0.300	1
Perfluorohexanesulfonic Acid (PFHxS)	404		ng/l	1.50	0.360	1
Perfluorooctanoic Acid (PFOA)	107		ng/l	1.50	0.653	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	18.8		ng/l	6.01	2.03	1
Perfluoroheptanesulfonic Acid (PFHpS)	15.0		ng/l	1.50	0.405	1
Perfluorononanoic Acid (PFNA)	38.7		ng/l	1.50	0.473	1
Perfluorooctanesulfonic Acid (PFOS)	1320	E	ng/l	1.50	0.683	1
Perfluorodecanoic Acid (PFDA)	4.18		ng/l	1.50	0.608	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	44.0		ng/l	6.01	2.34	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.50	0.466	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	4.33	F	ng/l	1.50	0.818	1
Perfluoroundecanoic Acid (PFUnA)	1.75		ng/l	1.50	0.653	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.50	0.345	1
Perfluorooctanesulfonamide (PFOSA)	622	E	ng/l	1.50	0.405	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.50	0.811	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.50	0.691	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.50	0.563	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.50	0.398	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.01	0.841	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.01	0.946	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.50	0.571	1

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-01 Date Collected: 06/19/24 10:43

Client ID: MW-13S Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.01	1.24	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.01	1.24	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	4.01		ng/l	1.50	0.653	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.50	0.691	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.0	3.53	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.0	1.84	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.00	0.428	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.00	0.398	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.00	0.330	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.00	1.77	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.51	2.48	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.5	8.78	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.5	5.92	1

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-01 Date Collected: 06/19/24 10:43

Client ID: MW-13S Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	80		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	85		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	89		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	98		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	79		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	85		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	80		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	80		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	82		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	77		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	77		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	73		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	75		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	73		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	79		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	97		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	95		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	81		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	81		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	90		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	**95**	Q	11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	**100**	Q	11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	106		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	108		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435150
Report Date: 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-01 D
Client ID: MW-13S
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/19/24 10:43
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/14/24 18:48
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 07/12/24 17:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	1140		ng/l	7.51	3.42	5
Perfluorooctanesulfonamide (PFOSA)	604		ng/l	7.51	2.03	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	81		32-114
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	73		14-108

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435150
Report Date: 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-02
Client ID: TW64-0
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/19/24 13:40
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/13/24 13:53
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 07/12/24 17:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	4.06	J	ng/l	5.96	0.954	1
Perfluoropentanoic Acid (PFPeA)	3.65		ng/l	2.98	0.797	1
Perfluorobutanesulfonic Acid (PFBS)	4.98		ng/l	1.49	0.499	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.96	1.56	1
Perfluorohexanoic Acid (PFHxA)	3.26		ng/l	1.49	0.440	1
Perfluoropentanesulfonic Acid (PFPeS)	0.305	J	ng/l	1.49	0.261	1
Perfluoroheptanoic Acid (PFHpA)	2.08		ng/l	1.49	0.298	1
Perfluorohexanesulfonic Acid (PFHxS)	1.87		ng/l	1.49	0.358	1
Perfluorooctanoic Acid (PFOA)	4.97		ng/l	1.49	0.648	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.96	2.01	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.49	0.402	1
Perfluorononanoic Acid (PFNA)	0.879	J	ng/l	1.49	0.469	1
Perfluorooctanesulfonic Acid (PFOS)	6.59		ng/l	1.49	0.678	1
Perfluorodecanoic Acid (PFDA)	0.857	J	ng/l	1.49	0.603	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.96	2.32	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.49	0.462	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.49	0.812	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.49	0.648	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.49	0.343	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.49	0.402	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.49	0.804	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.49	0.685	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.49	0.559	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.49	0.395	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.96	0.834	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.96	0.939	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.49	0.566	1

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-02 Date Collected: 06/19/24 13:40

Client ID: TW64-0 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.96	1.23	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.96	1.23	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.49	0.648	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.49	0.685	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.9	3.50	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.9	1.82	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.98	0.425	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.98	0.395	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.98	0.328	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.98	1.76	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.45	2.46	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.2	8.72	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.2	5.88	1

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-02 Date Collected: 06/19/24 13:40

Client ID: TW64-0 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	74		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	80		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	73		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	73		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	74		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	77		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	72		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	71		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	67		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	65		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	71		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	64		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	60		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	61		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	67		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	75		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	65		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	75		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	65		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	81		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	66		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	71		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	82		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	82		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435150
Report Date: 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-03
Client ID: TW4-08
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/19/24 16:10
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/13/24 14:06
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 07/12/24 17:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.35	J	ng/l	6.40	1.02	1
Perfluoropentanoic Acid (PFPeA)	3.46		ng/l	3.20	0.856	1
Perfluorobutanesulfonic Acid (PFBS)	2.30		ng/l	1.60	0.536	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.40	1.67	1
Perfluorohexanoic Acid (PFHxA)	3.05		ng/l	1.60	0.472	1
Perfluoropentanesulfonic Acid (PFPeS)	0.472	J	ng/l	1.60	0.280	1
Perfluoroheptanoic Acid (PFHpA)	3.03		ng/l	1.60	0.320	1
Perfluorohexanesulfonic Acid (PFHxS)	3.18		ng/l	1.60	0.384	1
Perfluorooctanoic Acid (PFOA)	9.69		ng/l	1.60	0.696	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	7.04		ng/l	6.40	2.16	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.60	0.432	1
Perfluorononanoic Acid (PFNA)	1.62		ng/l	1.60	0.504	1
Perfluorooctanesulfonic Acid (PFOS)	9.87		ng/l	1.60	0.728	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.648	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.40	2.49	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.496	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.872	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.696	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.368	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.432	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.864	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.736	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.600	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.424	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.40	0.896	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.40	1.01	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.608	1

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-03 Date Collected: 06/19/24 16:10

Client ID: TW4-08 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.40	1.32	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.40	1.32	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.696	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.736	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.76	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.456	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.424	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.352	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	1.89	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.00	2.64	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.0	9.36	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.0	6.31	1

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-03 Date Collected: 06/19/24 16:10

Client ID: TW4-08 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	86		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	95		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	88		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	90		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	87		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	93		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	88		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	86		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	82		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	87		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	74		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	65		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	70		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	55		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	68		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	62		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	57		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	65		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	57		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	94		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	55		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	58		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	65		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	65		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435150
Report Date: 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-04
Client ID: TW5-08
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/19/24 17:35
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/13/24 14:19
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 07/12/24 17:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	6.01	J	ng/l	6.23	0.997	1
Perfluoropentanoic Acid (PFPeA)	8.58		ng/l	3.12	0.833	1
Perfluorobutanesulfonic Acid (PFBS)	1.59		ng/l	1.56	0.522	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.23	1.63	1
Perfluorohexanoic Acid (PFHxA)	6.68		ng/l	1.56	0.460	1
Perfluoropentanesulfonic Acid (PFPeS)	1.11	J	ng/l	1.56	0.273	1
Perfluoroheptanoic Acid (PFHpA)	3.58		ng/l	1.56	0.312	1
Perfluorohexanesulfonic Acid (PFHxS)	6.44		ng/l	1.56	0.374	1
Perfluorooctanoic Acid (PFOA)	9.86		ng/l	1.56	0.678	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27.2		ng/l	6.23	2.10	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.491	J	ng/l	1.56	0.421	1
Perfluorononanoic Acid (PFNA)	0.904	J	ng/l	1.56	0.491	1
Perfluorooctanesulfonic Acid (PFOS)	8.76		ng/l	1.56	0.709	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.56	0.631	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.23	2.42	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.56	0.483	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.56	0.849	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.56	0.678	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.56	0.358	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.56	0.421	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.56	0.841	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.56	0.717	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.56	0.584	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.56	0.413	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.23	0.872	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.23	0.981	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.56	0.592	1

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-04 Date Collected: 06/19/24 17:35

Client ID: TW5-08 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.23	1.28	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.23	1.28	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.56	0.678	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.56	0.717	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.6	3.66	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.6	1.91	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.12	0.444	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.12	0.413	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.12	0.343	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.12	1.84	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.79	2.57	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	38.9	9.11	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	38.9	6.14	1

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-04 Date Collected: 06/19/24 17:35

Client ID: TW5-08 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	91		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	93		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	91		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	160		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	94		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	104		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	89		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	90		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	134		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	90		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	84		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	75		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	126		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	75		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	73		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	72		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	80		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	73		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	67		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	93		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	60		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	63		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	75		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	72		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435150
Report Date: 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-05
Client ID: VDT-05
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/19/24 12:40
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/13/24 14:32
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 07/12/24 17:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.11	J	ng/l	6.69	1.07	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.34	0.895	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.67	0.560	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.69	1.75	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.67	0.493	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.67	0.293	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.67	0.334	1
Perfluorohexanesulfonic Acid (PFHxS)	1.81		ng/l	1.67	0.401	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.67	0.727	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	2.57	J	ng/l	6.69	2.26	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.67	0.451	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.67	0.527	1
Perfluorooctanesulfonic Acid (PFOS)	3.28		ng/l	1.67	0.761	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.67	0.677	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.69	2.60	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.67	0.518	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.67	0.911	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.67	0.727	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.67	0.385	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.67	0.451	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.67	0.903	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.67	0.769	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.67	0.627	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.67	0.443	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.69	0.936	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.69	1.05	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.67	0.635	1

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-05 Date Collected: 06/19/24 12:40

Client ID: VDT-05 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.69	1.38	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.69	1.38	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.67	0.727	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.67	0.769	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.7	3.93	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.7	2.05	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.34	0.476	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.34	0.443	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.34	0.368	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.34	1.97	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.36	2.76	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	41.8	9.78	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	41.8	6.60	1

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-05 Date Collected: 06/19/24 12:40

Client ID: VDT-05 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	82		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	89		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	87		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	99		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	85		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	91		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	87		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	82		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	82		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	82		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	86		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	82		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	83		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	70		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	86		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	82		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	79		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	92		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	83		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	90		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	68		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	74		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	87		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	89		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435150
Report Date: 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-06
Client ID: 64-M1
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/19/24 14:00
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/13/24 14:44
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 07/12/24 17:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.43	J	ng/l	6.82	1.09	1
Perfluoropentanoic Acid (PFPeA)	4.15		ng/l	3.41	0.912	1
Perfluorobutanesulfonic Acid (PFBS)	5.25		ng/l	1.70	0.571	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.82	1.78	1
Perfluorohexanoic Acid (PFHxA)	3.12		ng/l	1.70	0.503	1
Perfluoropentanesulfonic Acid (PFPeS)	0.571	J	ng/l	1.70	0.298	1
Perfluoroheptanoic Acid (PFHpA)	1.63	J	ng/l	1.70	0.341	1
Perfluorohexanesulfonic Acid (PFHxS)	3.12		ng/l	1.70	0.409	1
Perfluorooctanoic Acid (PFOA)	4.33		ng/l	1.70	0.742	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	95.2		ng/l	6.82	2.30	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.70	0.460	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.70	0.537	1
Perfluorooctanesulfonic Acid (PFOS)	3.78		ng/l	1.70	0.776	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.70	0.690	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.82	2.65	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.70	0.528	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.70	0.929	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.70	0.742	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.70	0.392	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.70	0.460	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.70	0.920	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.70	0.784	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.70	0.639	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.70	0.452	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.82	0.954	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.82	1.07	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.70	0.648	1

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-06 Date Collected: 06/19/24 14:00

Client ID: 64-M1 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.82	1.41	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.82	1.41	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.70	0.742	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.70	0.784	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	17.0	4.00	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	17.0	2.09	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.41	0.486	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.41	0.452	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.41	0.375	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.41	2.01	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.52	2.81	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	42.6	9.97	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	42.6	6.72	1

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-06 Date Collected: 06/19/24 14:00

Client ID: 64-M1 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	88		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	88		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	92		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	135		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	88		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	94		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	88		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	85		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	100		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	84		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	81		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	74		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	111		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	83		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	75		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	79		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	91		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	73		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	69		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	91		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	67		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	70		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	82		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	80		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435150
Report Date: 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-07
Client ID: TW7-08
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/19/24 15:40
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/13/24 14:57
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 07/12/24 17:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	10.2		ng/l	6.72	1.08	1
Perfluoropentanoic Acid (PFPeA)	27.0		ng/l	3.36	0.899	1
Perfluorobutanesulfonic Acid (PFBS)	1.60	J	ng/l	1.68	0.563	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.72	1.76	1
Perfluorohexanoic Acid (PFHxA)	16.4		ng/l	1.68	0.496	1
Perfluoropentanesulfonic Acid (PFPeS)	0.782	J	ng/l	1.68	0.294	1
Perfluoroheptanoic Acid (PFHpA)	5.25		ng/l	1.68	0.336	1
Perfluorohexanesulfonic Acid (PFHxS)	4.44		ng/l	1.68	0.403	1
Perfluorooctanoic Acid (PFOA)	8.29		ng/l	1.68	0.731	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.72	2.27	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.68	0.454	1
Perfluorononanoic Acid (PFNA)	0.933	J	ng/l	1.68	0.530	1
Perfluorooctanesulfonic Acid (PFOS)	4.45		ng/l	1.68	0.765	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.68	0.681	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.72	2.61	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.68	0.521	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.68	0.916	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.68	0.731	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.68	0.387	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.68	0.454	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.68	0.908	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.68	0.773	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.68	0.630	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.68	0.445	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.72	0.941	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.72	1.06	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.68	0.639	1

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-07 Date Collected: 06/19/24 15:40

Client ID: TW7-08 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.72	1.39	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.72	1.39	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.68	0.731	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.68	0.773	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.8	3.95	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.8	2.06	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.36	0.479	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.36	0.445	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.36	0.370	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.36	1.98	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.40	2.77	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	42.0	9.83	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	42.0	6.63	1

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-07 Date Collected: 06/19/24 15:40

Client ID: TW7-08 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	91		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	95		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	89		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	119		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	89		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	95		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	89		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	86		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	94		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	83		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	74		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	63		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	89		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	56		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	63		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	62		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	64		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	64		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	57		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	95		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	55		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	56		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	67		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	64		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435150
Report Date: 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-08
Client ID: M5-90
Sample Location: 155 S. FLINT ROCK ROAD

Date Collected: 06/19/24 17:00
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 07/13/24 15:10
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 07/12/24 17:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	6.53	J	ng/l	6.69	1.07	1
Perfluoropentanoic Acid (PFPeA)	4.18		ng/l	3.35	0.895	1
Perfluorobutanesulfonic Acid (PFBS)	12.2		ng/l	1.67	0.561	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.69	1.75	1
Perfluorohexanoic Acid (PFHxA)	3.19		ng/l	1.67	0.494	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.67	0.293	1
Perfluoroheptanoic Acid (PFHpA)	1.51	J	ng/l	1.67	0.335	1
Perfluorohexanesulfonic Acid (PFHxS)	1.15	J	ng/l	1.67	0.402	1
Perfluorooctanoic Acid (PFOA)	2.81		ng/l	1.67	0.728	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.69	2.26	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.67	0.452	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.67	0.527	1
Perfluorooctanesulfonic Acid (PFOS)	2.45		ng/l	1.67	0.762	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.67	0.678	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.69	2.60	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.67	0.519	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.67	0.912	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.67	0.728	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.67	0.385	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.67	0.452	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.67	0.904	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.67	0.770	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.67	0.628	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.67	0.444	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.69	0.937	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.69	1.05	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.67	0.636	1

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-08 Date Collected: 06/19/24 17:00

Client ID: M5-90 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.69	1.38	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.69	1.38	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.67	0.728	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.67	0.770	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.7	3.93	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.7	2.05	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.35	0.477	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.35	0.444	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.35	0.368	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.35	1.97	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.37	2.76	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	41.8	9.79	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	41.8	6.60	1

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-08 Date Collected: 06/19/24 17:00

Client ID: M5-90 Date Received: 06/21/24

Sample Location: 155 S. FLINT ROCK ROAD Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	85		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	91		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	84		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	81		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	82		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	89		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	82		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	82		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	76		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	80		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	91		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	78		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	68		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	76		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	85		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	91		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	82		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	87		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	81		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	95		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	76		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	80		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	92		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	93		10-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 07/13/24 12:37
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 07/12/24 17:45

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-08 Batch: WG1946422-1					
Perfluorobutanoic Acid (PFBA)	1.64	J	ng/l	6.40	1.02
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.20	0.856
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.60	0.536
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.40	1.67
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.60	0.472
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.60	0.280
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.60	0.320
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.60	0.384
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.60	0.696
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.40	2.16
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.60	0.432
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.60	0.504
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.60	0.728
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.648
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.40	2.49
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.496
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.872
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.696
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.368
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.432
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.864
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.736
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.600
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.424
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.40	0.896
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.40	1.01
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.608

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 07/13/24 12:37
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 07/12/24 17:45

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-08 Batch: WG1946422-1					
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.40	1.32
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.40	1.32
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.696
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.736
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.76
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.456
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.424
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.352
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	1.89
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.00	2.64
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.0	9.36
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.0	6.31

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 07/13/24 12:37
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 07/12/24 17:45

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-08 Batch: WG1946422-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	87		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	95		29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	86		41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	75		10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	87		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	88		27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	86		46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	84		39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	75		10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	82		38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	89		32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	84		28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	72		10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	81		10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	92		16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	87		14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	87		10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	96		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	90		10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	97		35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	64		11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	73		11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	92		10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	96		10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-08 Batch: WG1946422-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	112		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	103		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	99		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	105		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	110		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	105		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	99		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	102		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	100		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	99		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	99		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	88		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	111		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	95		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	111		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	92		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	92		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	96		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	98		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	94		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	90		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	95		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-08 Batch: WG1946422-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	104		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	103		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	97		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	99		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	77		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	113		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	103		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	101		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	80		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	111		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	104		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	111		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	92		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	112		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	139		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	103		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	97		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	78		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-08 Batch: WG1946422-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	90				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	101				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	87				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	74				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	86				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	94				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	86				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	88				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	78				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	97				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	92				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	92				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	84				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	85				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	101				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	91				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	91				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	96				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	89				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	102				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	62				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	70				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	89				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	98				10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-08 Batch: WG1946422-3								
Perfluorobutanoic Acid (PFBA)	107		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	106		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	108		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	108		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	106		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	111		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	109		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	103		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	97		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	105		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	104		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	96		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	96		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	102		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	108		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	104		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	106		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	107		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	100		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	102		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	107		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	106		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-08 Batch: WG1946422-3								
Perfluorotridecanoic Acid (PFTrDA)	110		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	105		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	102		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	103		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	83		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	119		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	109		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	110		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	99		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	117		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	117		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	117		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	98		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	115		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	129		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	106		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	106		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	99		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-08 Batch: WG1946422-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	89				41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	98				29-123
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	85				41-125
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	76				10-290
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	89				40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	92				27-156
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	86				46-115
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	88				39-121
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	79				10-261
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	90				38-114
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	93				32-114
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	85				28-115
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	83				10-213
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	86				10-172
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	88				16-123
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	93				14-108
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	88				10-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	91				10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	82				10-145
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	99				35-142
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	72				11-94
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	81				11-97
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	97				10-137
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	97				10-130

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2435150

Report Date: 08/12/24

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG1946422-4 WG1946422-5 QC Sample: L2435150-01 Client ID: MW-13S												
Perfluorobutanoic Acid (PFBA)	12.5	78.1	91.9	102		93.2	104		40-150	1		30
Perfluoropentanoic Acid (PFPeA)	29.9	39	66.4	94		70.9	106		40-150	7		30
Perfluorobutanesulfonic Acid (PFBS)	16.7	17.3	34.1	101		34.2	102		40-150	0		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	73.2	70.2	96		74.4	102		40-150	6		30
Perfluorohexanoic Acid (PFHxA)	81.4	19.5	101	100		102	106		40-150	1		30
Perfluoropentanesulfonic Acid (PFPeS)	17.6	18.4	40.3	124		40.6	126		40-150	1		30
Perfluoroheptanoic Acid (PFHpA)	16.9	19.5	36.2	99		37.2	105		40-150	3		30
Perfluorohexanesulfonic Acid (PFHxS)	404	17.8	424	112		427	130		40-150	1		30
Perfluorooctanoic Acid (PFOA)	107	19.5	126	97		129	113		40-150	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	18.8	74.2	97.2	106		102	113		40-150	5		30
Perfluoroheptanesulfonic Acid (PFHpS)	15.0	18.6	42.1	146		39.0	130		40-150	8		30
Perfluorononanoic Acid (PFNA)	38.7	19.5	55.3	85		56.2	90		40-150	2		30
Perfluorooctanesulfonic Acid (PFOS)	1320E	18.1	1360E	**221**	Q	1320E	**0**	Q	40-150	3		30
Perfluorodecanoic Acid (PFDA)	4.18	19.5	24.5	104		22.8	96		40-150	7		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	44.0	74.9	117	97		122	105		40-150	4		30
Perfluorononanesulfonic Acid (PFNS)	ND	18.8	25.3	135		26.2	140		40-150	3		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	4.33F	19.5	24.6	104		25.3	108		40-150	3		30
Perfluoroundecanoic Acid (PFUnA)	1.75	19.5	23.0	109		23.7	113		40-150	3		30
Perfluorodecanesulfonic Acid (PFDS)	ND	18.8	22.8	121		25.3	135		40-150	10		30
Perfluorooctanesulfonamide (PFOSA)	622E	19.5	633E	56		617E	**0**	Q	40-150	3		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	19.5	24.2	124		21.6	111		40-150	11		30
Perfluorododecanoic Acid (PFDoA)	ND	19.5	20.5	105		21.0	108		40-150	2		30

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435150
Report Date: 08/12/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG1946422-4 WG1946422-5 QC Sample: L2435150-01 Client ID: MW-13S												
Perfluorotridecanoic Acid (PFTrDA)	ND	19.5	22.5	115		24.0	124		40-150	6		30
Perfluorotetradecanoic Acid (PFTeDA)	ND	19.5	21.0	108		21.1	109		40-150	0		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	78.1	79.3	102		81.5	105		40-150	3		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	73.8	75.4	102		79.0	108		40-150	5		30
Perfluorododecanesulfonic Acid (PFDoS)	ND	18.9	19.3	102		20.3	108		40-150	5		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	73	78.7	108		83.0	114		40-150	5		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	73.8	70.8	96		79.9	109		40-150	12		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	4.01	19.5	26.0	113		29.1	129		40-150	11		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	19.5	19.1	98		19.9	102		40-150	4		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	195	227	116		237	122		40-150	4		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	195	230	118		239	123		40-150	4		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	39	47.0	120		51.1	132		40-150	8		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	39	36.6	94		37.8	97		40-150	3		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	34.7	39.3	113		40.4	117		40-150	3		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	39	53.6	137		49.5	127		40-150	8		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	97.6	103	106		107	110		40-150	4		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	488	489	100		546	112		40-150	11		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	488	486	100		528	109		40-150	8		30

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG1946422-4 WG1946422-5 QC Sample: L2435150-01 Client ID: MW-13S												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	100		78		10-213
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	126		95		10-290
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	89		82		10-261
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	**104**	Q	**102**	Q	11-97
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	101		100		10-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	112		114		10-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	94		87		11-94
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	84		76		10-172
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	112		113		10-137
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	82		79		46-115
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	102		102		14-108
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	85		79		32-114
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	95		88		41-125
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	73		81		16-123
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	76		79		28-115
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	87		82		40-121
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	92		92		27-156
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	71		89		10-126
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	66		84		10-145
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	88		83		41-123
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	92		88		29-123
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	85		79		39-121
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	86		79		38-114

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2435150

Report Date: 08/12/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG1946422-4 WG1946422-5 QC Sample: L2435150-01 Client ID: MW-13S												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	94		92		35-142

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 01.0177641.00

Lab Number: L2435150

Report Date: 08/12/24

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG1946422-4 WG1946422-5 QC Sample: L2435150-01 Client ID: MW-13S												
Perfluorooctanesulfonic Acid (PFOS)	1140	18.1	1100	**0**	Q	1400	**444**	Q	40-150	3		30
Perfluorooctanesulfonamide (PFOSA)	604	19.5	628	**31**	Q	610	**0**	Q	40-150	4		30

Surrogate	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	68		74		14-108
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	79		64		32-114

PETROLEUM HYDROCARBONS

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435150
Report Date: 08/12/24

SAMPLE RESULTS

Lab ID:	L2435150-01	Date Collected:	06/19/24 10:43
Client ID:	MW-13S	Date Received:	06/21/24
Sample Location:	155 S. FLINT ROCK ROAD	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Water		
Analytical Method:	131,VPH-18-2.1		
Analytical Date:	06/27/24 14:02		
Analyst:	BAD		

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	100	100.	1
C9-C12 Aliphatics	ND		ug/l	100	100.	1
C9-C10 Aromatics	ND		ug/l	100	100.	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	100	100.	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	100	100.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	115		70-130
2,5-Dibromotoluene-FID	119		70-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435150
Report Date: 08/12/24

SAMPLE RESULTS

Lab ID:	L2435150-01			Date Collected:	06/19/24 10:43
Client ID:	MW-13S			Date Received:	06/21/24
Sample Location:	155 S. FLINT ROCK ROAD			Field Prep:	Not Specified
Sample Depth:					
Matrix:	Water			Extraction Method:	EPA 3510C
Analytical Method:	135,EPH-19-2.1			Extraction Date:	06/28/24 02:41
Analytical Date:	06/29/24 12:08	M.S. Analytical Date:	06/30/24 14:21	Cleanup Method1:	EPH-19-2.1
Analyst:	SBC	M.S. Analyst:	JJW	Cleanup Date1:	06/29/24

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/Targets via GCMS-SIM - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	100.	1
C19-C36 Aliphatics	ND		ug/l	100	100.	1
C11-C22 Aromatics	ND		ug/l	100	100.	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	100.	1
Naphthalene	ND		ug/l	0.400	0.136	1
2-Methylnaphthalene	ND		ug/l	0.400	0.077	1
Acenaphthylene	ND		ug/l	0.400	0.054	1
Acenaphthene	ND		ug/l	0.400	0.091	1
Fluorene	ND		ug/l	0.400	0.097	1
Phenanthrene	ND		ug/l	0.400	0.084	1
Anthracene	ND		ug/l	0.400	0.079	1
Fluoranthene	ND		ug/l	0.400	0.121	1
Pyrene	ND		ug/l	0.400	0.114	1
Benzo(a)anthracene	ND		ug/l	0.400	0.088	1
Chrysene	ND		ug/l	0.400	0.102	1
Benzo(b)fluoranthene	ND		ug/l	0.400	0.102	1
Benzo(k)fluoranthene	ND		ug/l	0.400	0.126	1
Benzo(a)pyrene	ND		ug/l	0.200	0.072	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	0.095	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	0.091	1
Benzo(ghi)perylene	ND		ug/l	0.400	0.102	1

Project Name: BARNSTABLE
Project Number: 01.0177641.00
Lab Number: L2435150
Report Date: 08/12/24

SAMPLE RESULTS

Lab ID: L2435150-01
Client ID: MW-13S
Sample Location: 155 S. FLINT ROCK ROAD
Date Collected: 06/19/24 10:43
Date Received: 06/21/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/Targets via GCMS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	68		40-140
o-Terphenyl	73		40-140
2-Fluorobiphenyl	75		40-140
2-Bromonaphthalene	78		40-140
O-Terphenyl-MS	74		40-140

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 135,EPH-19-2.1
Analytical Date: 06/29/24 10:29
Analyst: SBC

M.S. Analytical Date: 06/30/24 12:40
M.S. Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 06/28/24 02:41
Cleanup Method: EPH-19-2.1
Cleanup Date: 06/29/24

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/Targets via GCMS-SIM - Westborough Lab for sample(s): 01 Batch: WG1940596-1					
C9-C18 Aliphatics	ND		ug/l	100	100.
C19-C36 Aliphatics	ND		ug/l	100	100.
C11-C22 Aromatics	ND		ug/l	100	100.
C11-C22 Aromatics, Adjusted	ND		ug/l	100	100.
Naphthalene	ND		ug/l	0.400	0.136
2-Methylnaphthalene	ND		ug/l	0.400	0.077
Acenaphthylene	ND		ug/l	0.400	0.054
Acenaphthene	ND		ug/l	0.400	0.091
Fluorene	ND		ug/l	0.400	0.097
Phenanthrene	ND		ug/l	0.400	0.084
Anthracene	ND		ug/l	0.400	0.079
Fluoranthene	ND		ug/l	0.400	0.121
Pyrene	ND		ug/l	0.400	0.114
Benzo(a)anthracene	ND		ug/l	0.400	0.088
Chrysene	ND		ug/l	0.400	0.102
Benzo(b)fluoranthene	ND		ug/l	0.400	0.102
Benzo(k)fluoranthene	ND		ug/l	0.400	0.126
Benzo(a)pyrene	ND		ug/l	0.200	0.072
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	0.095
Dibenzo(a,h)anthracene	ND		ug/l	0.400	0.091
Benzo(ghi)perylene	ND		ug/l	0.400	0.102

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 135,EPH-19-2.1
Analytical Date: 06/29/24 10:29
Analyst: SBC

M.S. Analytical Date: 06/30/24 12:40
M.S. Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 06/28/24 02:41
Cleanup Method: EPH-19-2.1
Cleanup Date: 06/29/24

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/Targets via GCMS-SIM - Westborough Lab for sample(s): 01 Batch: WG1940596-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	68		40-140
o-Terphenyl	72		40-140
2-Fluorobiphenyl	74		40-140
2-Bromonaphthalene	77		40-140
O-Terphenyl-MS	71		40-140

Project Name: BARNSTABLE **Lab Number:** L2435150

Project Number: 01.0177641.00 **Report Date:** 08/12/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 131,VPH-18-2.1
Analytical Date: 06/27/24 11:31
Analyst: BAD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 01 Batch: WG1940754-4					
C5-C8 Aliphatics	ND		ug/l	100	100.
C9-C12 Aliphatics	ND		ug/l	100	100.
C9-C10 Aromatics	ND		ug/l	100	100.
C5-C8 Aliphatics, Adjusted	ND		ug/l	100	100.
C9-C12 Aliphatics, Adjusted	ND		ug/l	100	100.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	113		70-130
2,5-Dibromotoluene-FID	115		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/Targets via GCMS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1940596-2 WG1940596-3								
C9-C18 Aliphatics	65		58		40-140	11		20
C19-C36 Aliphatics	83		82		40-140	1		20
C11-C22 Aromatics	82		72		40-140	13		20
Naphthalene	88		75		40-140	16		20
2-Methylnaphthalene	99		87		40-140	13		20
Acenaphthylene	115		103		40-140	11		20
Acenaphthene	94		83		40-140	12		20
Fluorene	104		93		40-140	11		20
Phenanthrene	101		90		40-140	12		20
Anthracene	105		94		40-140	11		20
Fluoranthene	109		98		40-140	11		20
Pyrene	103		94		40-140	9		20
Benzo(a)anthracene	118		104		40-140	13		20
Chrysene	110		98		40-140	12		20
Benzo(b)fluoranthene	111		100		40-140	10		20
Benzo(k)fluoranthene	100		89		40-140	12		20
Benzo(a)pyrene	115		102		40-140	12		20
Indeno(1,2,3-cd)Pyrene	114		100		40-140	13		20
Dibenzo(a,h)anthracene	105		93		40-140	12		20
Benzo(ghi)perylene	98		86		40-140	13		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/Targets via GCMS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1940596-2 WG1940596-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	72		69		40-140
o-Terphenyl	82		71		40-140
2-Fluorobiphenyl	82		72		40-140
2-Bromonaphthalene	85		75		40-140
O-Terphenyl-MS	113		101		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Lab Control Sample Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG1940754-2 WG1940754-3								
C5-C8 Aliphatics	101		99		70-130	2		25
C9-C12 Aliphatics	113		109		70-130	4		25
C9-C10 Aromatics	105		104		70-130	1		25
Benzene	104		103		70-130	1		25
Toluene	103		102		70-130	1		25
Ethylbenzene	108		107		70-130	1		25
p/m-Xylene	107		105		70-130	2		25
o-Xylene	108		107		70-130	1		25
Methyl tert butyl ether	110		110		70-130	0		25
Naphthalene	108		110		70-130	2		25
1,2,4-Trimethylbenzene	105		104		70-130	1		25
Pentane	100		99		70-130	1		25
2-Methylpentane	102		100		70-130	2		25
2,2,4-Trimethylpentane	101		99		70-130	2		25
n-Nonane	111		108		30-130	3		25
n-Decane	118		114		70-130	3		25
n-Butylcyclohexane	109		106		70-130	3		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	118		120		70-130
2,5-Dibromotoluene-FID	119		120		70-130

Project Name: BARNSTABLE
Project Number: 01.0177641.00

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Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent
D	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2435150-01A	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-01B	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-01C	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-01D	Amber 1000ml HCl preserved	A	<2	<2	2.6	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2435150-01E	Amber 1000ml HCl preserved	A	<2	<2	2.6	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2435150-01F	Vial HCl preserved	A	NA		2.6	Y	Absent		VPH-18(14)
L2435150-01G	Vial HCl preserved	A	NA		2.6	Y	Absent		VPH-18(14)
L2435150-01H	Vial HCl preserved	A	NA		2.6	Y	Absent		VPH-18(14)
L2435150-01I	Vial HCl preserved	A	NA		2.6	Y	Absent		MCP-8260-21(14)
L2435150-01J	Vial HCl preserved	A	NA		2.6	Y	Absent		MCP-8260-21(14)
L2435150-01K	Vial HCl preserved	A	NA		2.6	Y	Absent		MCP-8260-21(14)
L2435150-02A	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-02B	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-02C	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-03A	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-03B	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-03C	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-04A	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-04B	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-04C	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

Lab Number: L2435150
Report Date: 08/12/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2435150-05A	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-05B	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-05C	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-06A	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-06B	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-06C	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-07A	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-07B	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-07C	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-08A	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-08B	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)
L2435150-08C	Plastic 500ml unpreserved	D	NA		2.2	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 01.0177641.00

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PFAS PARAMETER SUMMARY

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

Project Name: BARNSTABLE
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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:	BARNSTABLE	**Lab Number:**	L2435150
Project Number:	01.0177641.00	**Report Date:**	08/12/24

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

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

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

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

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

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

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

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

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

Report Format: DU Report with 'J' Qualifiers

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Footnotes

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

Terms

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

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

Report Format: DU Report with 'J' Qualifiers

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Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

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

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

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

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

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

REFERENCES

131 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, February 2018, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, June 1, 2018.

135 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, December 2019, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, March 1, 2020.

141 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA and IIB, November 2021.

144 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. Draft EPA Method 1633, EPA Document 821-D-22-001, June 2022.

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

Mansfield Facility
SM 2540D: TSS.
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.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

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

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, 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: 6/21/24

ALPHA Job #: L2435150

ALPHA Analytical
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: GZA GeoEnvironmental Inc.
Address: 249 Vanderbilt Ave
Norwood, MA 02062
Phone: 781-589-3866
Email: Jennifer.McKechnie@gza.com
Elora.Su@gza.com
Rowan.Thompson@gza.com

Additional Project Information:

Project Information

Project Name: Barnstable
Project Location: 155 S Flint Rock Rd
Project #: 01.0177641.00
Project Manager: Jennifer McKechnie
ALPHA Quote #: 27478

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client Info PO #:

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☒ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☒ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☒ Ranges & Targets ☐ Ranges Only SIM	VPH: ☐ Ranges & Targets ☒ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	PFAS: EPA 1633	Sample Comments	TOTAL # BOTTLES
-01	MW-13S	06/19/24	1043	GW	KC	X				X	X			X		11
-02	TW64-0		1340	GW	KC									X		3
-03	TW4-08		1610	GW	KC									X		3
-04	TW5-08		1735	GW	KC									X		3
-05	VDT-05		1240	GW	VER									X		3
-06	64-M1		1400	GW	VER									X		3
-07	TW7-08		1540	GW	VER									X		3
-08	MS-90	06/19/24	1700	GW	VER									X		3
Container Type						V				A	V			P		
Preservative						B				B	B			A		

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Victoria Rowan	06/20/24 1700		6/21 10:00
	6/21		6/21/24 1230
	6/21/24		6/21/24 1330
	6/21/24 1630		6/21/24 16:30

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

Method Blank Summary
Form 4
Volatiles

Client	: GZA GeoEnvironmental, Inc.	**Lab Number**	: L2435150
Project Name	: BARNSTABLE	**Project Number**	: 01.0177641.00
Lab Sample ID	: WG1940536-5	**Lab File ID**	: J240627A04
Instrument ID	: JACK2		
Matrix	: WATER	**Analysis Date**	: 06/27/24 06:16

Client Sample No.	Lab Sample ID	Analysis Date
WG1940536-3LCS	WG1940536-3	06/27/24 04:53
WG1940536-4LCSD	WG1940536-4	06/27/24 05:20
MW-13S	L2435150-01	06/27/24 07:11

Calibration Verification Summary
Form 7
Volatiles

Client	: GZA GeoEnvironmental, Inc.		**Lab Number**	: L2435150	
Project Name	: BARNSTABLE		**Project Number**	: 01.0177641.00	
Instrument ID	: JACK2		**Calibration Date**	: 06/27/24 04:53	
Lab File ID	: J240627A01		**Init. Calib. Date(s)**	: 06/21/24	06/21/24
Sample No	: WG1940536-2		**Init. Calib. Times**	: 02:01	06:08
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	102	0
Dichlorodifluoromethane	0.421	0.34	-	19.2	20	79	0
Chloromethane	0.41	0.366	-	10.7	20	88	0
Vinyl chloride	0.584	0.547	-	6.3	20	90	0
Bromomethane	0.336	0.277	-	17.6	20	98	0
Chloroethane	0.325	0.294	-	9.5	20	96	0
Trichlorofluoromethane	0.521	0.534	-	-2.5	20	104	0
Ethyl ether	0.137	0.136	-	0.7	20	106	0
1,1-Dichloroethene	0.289	0.288	-	0.3	20	105	0
Carbon disulfide	0.915	0.901	-	1.5	20	105	0
Freon-113	0.3	0.324	-	-8	20	109	0
Methylene chloride	0.333	0.331	-	0.6	20	102	0
Acetone	0.081	0.079	-	2.5	20	101	0
trans-1,2-Dichloroethene	0.32	0.321	-	-0.3	20	106	0
Methyl acetate	0.18	0.158	-	12.2	20	98	0
Methyl tert-butyl ether	0.746	0.67	-	10.2	20	100	0
tert-Butyl alcohol	0.022	0.021	-	4.5	20	98	0
Diisopropyl ether	1.038	0.924	-	11	20	99	0
1,1-Dichloroethane	0.648	0.617	-	4.8	20	104	0
Halothane	0.242	0.24	-	0.8	20	101	0
Acrylonitrile	0.082	0.076	-	7.3	20	97	0
Ethyl tert-butyl ether	0.907	0.787	-	13.2	20	99	0
Vinyl acetate	0.414	0.636	-	-53.6*	20	179	0
cis-1,2-Dichloroethene	0.359	0.354	-	1.4	20	104	0
2,2-Dichloropropane	0.495	0.544	-	-9.9	20	116	0
Bromochloromethane	0.172	0.168	-	2.3	20	109	0
Cyclohexane	0.589	0.582	-	1.2	20	106	0
Chloroform	0.588	0.575	-	2.2	20	103	0
Ethyl acetate	0.257	0.228	-	11.3	20	98	0
Carbon tetrachloride	10	9.659	-	3.4	20	107	0
Tetrahydrofuran	0.091	0.082	-	9.9	20	94	0
Dibromofluoromethane	0.277	0.271	-	2.2	20	101	0
1,1,1-Trichloroethane	0.507	0.525	-	-3.6	20	106	0
2-Butanone	0.115	0.102	-	11.3	20	97	0
1,1-Dichloropropene	0.427	0.42	-	1.6	20	106	0
Benzene	1.309	1.223	-	6.6	20	101	0
tert-Amyl methyl ether	0.799	0.675	-	15.5	20	99	0
1,2-Dichloroethane-d4	0.324	0.308	-	4.9	20	101	0
1,2-Dichloroethane	0.416	0.411	-	1.2	20	103	0
Methyl cyclohexane	10	10.83	-	-8.3	20	108	0
Trichloroethene	0.37	0.324	-	12.4	20	96	0
Dibromomethane	0.19	0.182	-	4.2	20	97	0
1,2-Dichloropropane	0.333	0.309	-	7.2	20	99	0

*** Value outside of QC limits.**

Calibration Verification Summary
Form 7
Volatiles

Client	: GZA GeoEnvironmental, Inc.		**Lab Number**	: L2435150	
Project Name	: BARNSTABLE		**Project Number**	: 01.0177641.00	
Instrument ID	: JACK2		**Calibration Date**	: 06/27/24 04:53	
Lab File ID	: J240627A01		**Init. Calib. Date(s)**	: 06/21/24	06/21/24
Sample No	: WG1940536-2		**Init. Calib. Times**	: 02:01	06:08
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Bromodichloromethane	0.439	0.418	-	4.8	20	101	0
1,4-Dioxane	0.00184	0.00178*	-	3.3	20	100	0
cis-1,3-Dichloropropene	0.479	0.461	-	3.8	20	102	0
Chlorobenzene-d5	1	1	-	0	20	103	0
Toluene-d8	1.233	1.238	-	-0.4	20	103	0
Toluene	1.087	0.984	-	9.5	20	103	0
4-Methyl-2-pentanone	0.113	0.092	-	18.6	20	97	0
Tetrachloroethene	0.454	0.433	-	4.6	20	108	0
trans-1,3-Dichloropropene	10	8.82	-	11.8	20	102	0
Ethyl methacrylate	0.364	0.341	-	6.3	20	103	0
1,1,2-Trichloroethane	0.26	0.241	-	7.3	20	102	0
Chlorodibromomethane	0.398	0.374	-	6	20	104	0
1,3-Dichloropropane	0.518	0.491	-	5.2	20	102	0
1,2-Dibromoethane	0.312	0.293	-	6.1	20	102	0
2-Hexanone	0.224	0.2	-	10.7	20	95	0
Chlorobenzene	1.177	1.093	-	7.1	20	106	0
Ethylbenzene	2.133	1.952	-	8.5	20	103	0
1,1,1,2-Tetrachloroethane	0.419	0.37	-	11.7	20	104	0
p/m Xylene	0.91	0.806	-	11.4	20	104	0
o Xylene	0.875	0.764	-	12.7	20	103	0
Styrene	20	17.092	-	14.5	20	105	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	106	0
Bromoform	0.477	0.39	-	18.2	20	100	0
Isopropylbenzene	3.468	3.351	-	3.4	20	107	0
4-Bromofluorobenzene	0.732	0.761	-	-4	20	105	0
Bromobenzene	0.789	0.759	-	3.8	20	103	0
n-Propylbenzene	4.152	4.021	-	3.2	20	107	0
1,4-Dichlorobutane	0.875	0.801	-	8.5	20	102	0
1,1,2,2-Tetrachloroethane	0.584	0.604	-	-3.4	20	112	0
4-Ethyltoluene	3.386	3.315	-	2.1	20	108	0
2-Chlorotoluene	2.604	2.541	-	2.4	20	105	0
1,3,5-Trimethylbenzene	3.01	2.875	-	4.5	20	106	0
1,2,3-Trichloropropane	0.529	0.506	-	4.3	20	104	0
trans-1,4-Dichloro-2-buten	0.208	0.201	-	3.4	20	105	0
4-Chlorotoluene	2.382	2.3	-	3.4	20	103	0
tert-Butylbenzene	2.486	2.392	-	3.8	20	108	0
1,2,4-Trimethylbenzene	2.925	2.767	-	5.4	20	106	0
sec-Butylbenzene	3.81	3.746	-	1.7	20	110	0
p-Isopropyltoluene	3.283	3.131	-	4.6	20	108	0
1,3-Dichlorobenzene	1.672	1.543	-	7.7	20	105	0
1,4-Dichlorobenzene	1.666	1.555	-	6.7	20	105	0
p-Diethylbenzene	1.911	1.857	-	2.8	20	112	0
n-Butylbenzene	2.855	2.839	-	0.6	20	109	0

*** Value outside of QC limits.**

Calibration Verification Summary
Form 7
Volatiles

Client	: GZA GeoEnvironmental, Inc.		**Lab Number**	: L2435150	
Project Name	: BARNSTABLE		**Project Number**	: 01.0177641.00	
Instrument ID	: JACK2		**Calibration Date**	: 06/27/24 04:53	
Lab File ID	: J240627A01		**Init. Calib. Date(s)**	: 06/21/24	06/21/24
Sample No	: WG1940536-2		**Init. Calib. Times**	: 02:01	06:08
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichlorobenzene	1.525	1.406	-	7.8	20	106	0
1,2,4,5-Tetramethylbenzene	2.773	2.435	-	12.2	20	104	0
1,2-Dibromo-3-chloropropan	0.115	0.105	-	8.7	20	98	0
1,3,5-Trichlorobenzene	1.136	1.077	-	5.2	20	109	0
Hexachlorobutadiene	0.419	0.433	-	-3.3	20	116	0
1,2,4-Trichlorobenzene	0.941	0.931	-	1.1	20	109	0
Naphthalene	2.388	2.208	-	7.5	20	104	0
1,2,3-Trichlorobenzene	0.851	0.831	-	2.4	20	109	0

*** Value outside of QC limits.**

Appendix I - Public Notification

Known for excellence.
Built on trust.

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION MANAGEMENT

249 Vanderbilt Avenue
Norwood, MA 02062
T: 781.278.3700
F: 781.278.5701
F: 781.278.5702
www.gza.com

September 5, 2024
File No. 01.0177641.00

Mark S. Ells, Town Manager
Town of Barnstable
200 Main Street
Hyannis, MA 02601

Thomas McKean, Director
Town of Barnstable Health Division
200 Main Street
Hyannis, MA 02601

Hans Keijser, Supervisor
Town of Barnstable Water Supply
Division
47 Old Yarmouth Road
Hyannis, MA 02601

Re: Notification of Interim Phase II CSA Status Report
Former Municipal Fire Training Facility
551 S Flint Rock Road
Hyannis, Massachusetts
Release Tracking Number (RTN) 4-26179

To Whom It May Concern:

On behalf of Barnstable County, GZA GeoEnvironmental, Inc. (GZA) is notifying you of the submittal of an Interim Phase II Comprehensive Site Assessment (CSA) Status Report for the above referenced property (the "Site"), designated as Release Tracking Number (RTN) 4-26179 by the Massachusetts Department of Environmental Protection (MassDEP).

A copy of the Interim Phase II CSA Status Report can be viewed after September 6, 2024, at the MassDEP website: https://eeaonline.eea.state.ma.us/portal/dep/wastesite/viewer/4-0026179. Please note that public involvement opportunities are available under 310 CMR 40.1403(9) and 40.1404. For more information about public involvement activities available under the Massachusetts Contingency Plan (MCP), see the MassDEP's web site (https://www.mass.gov/lists/public-involvement-during-cleanup-of-contaminated-properties).

Please contact the undersigned if you have questions or concerns.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

David E. Leone, LSP
Principal

John R. Paquin
Associate Principal/Project Coordinator

cc: MassDEP, BWSC, Southeast Region

GZA GeoEnvironmental, Inc.